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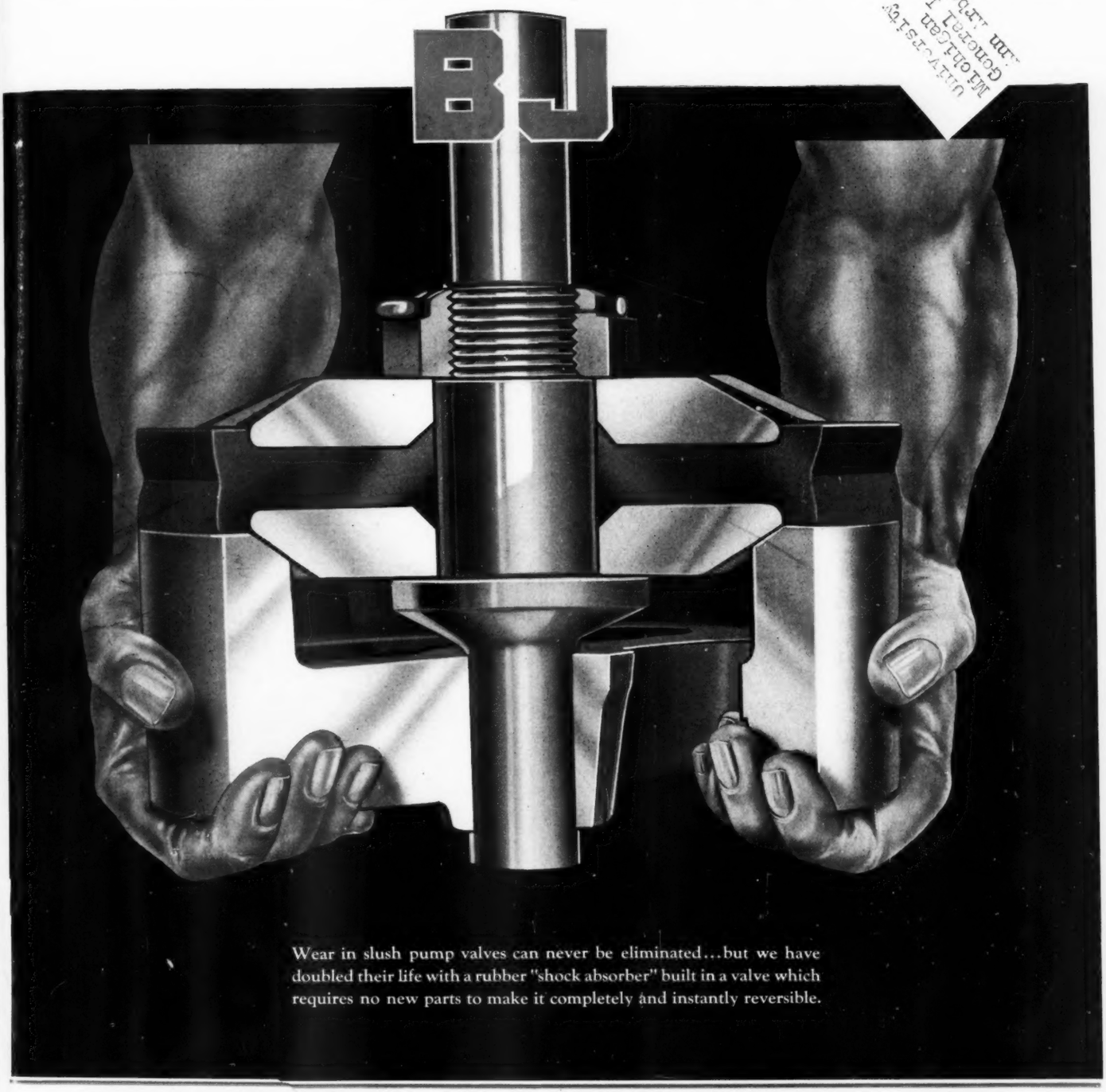

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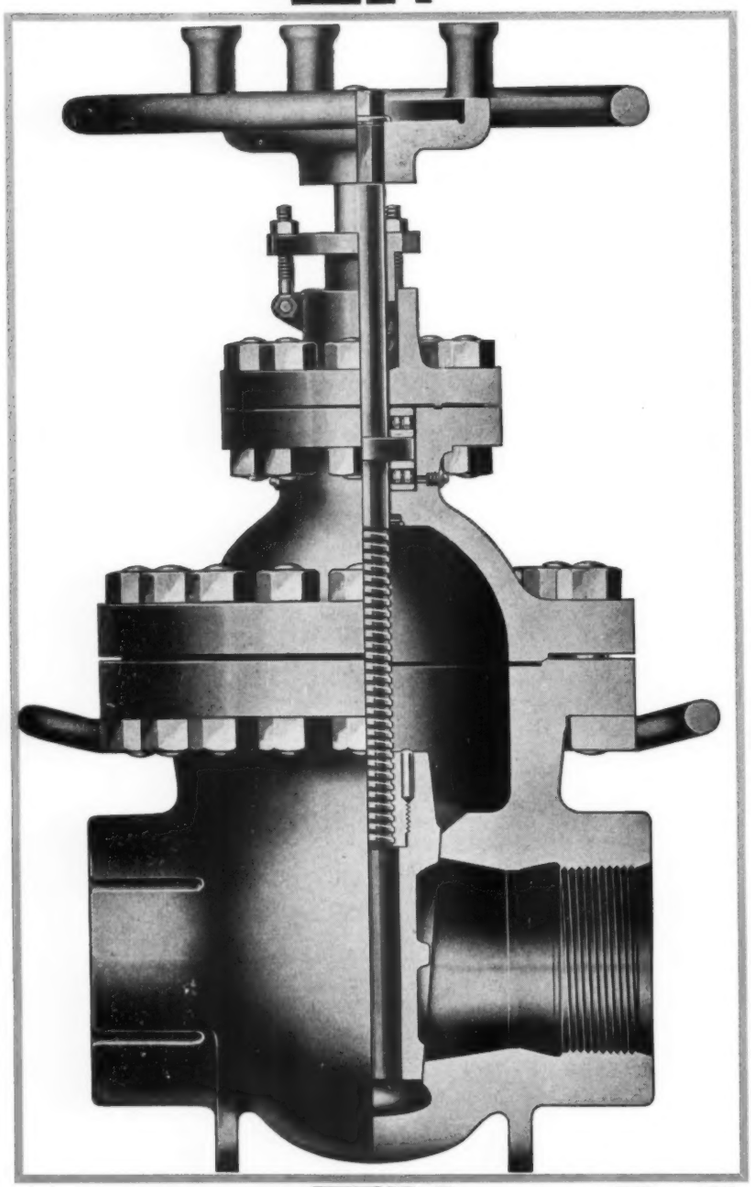

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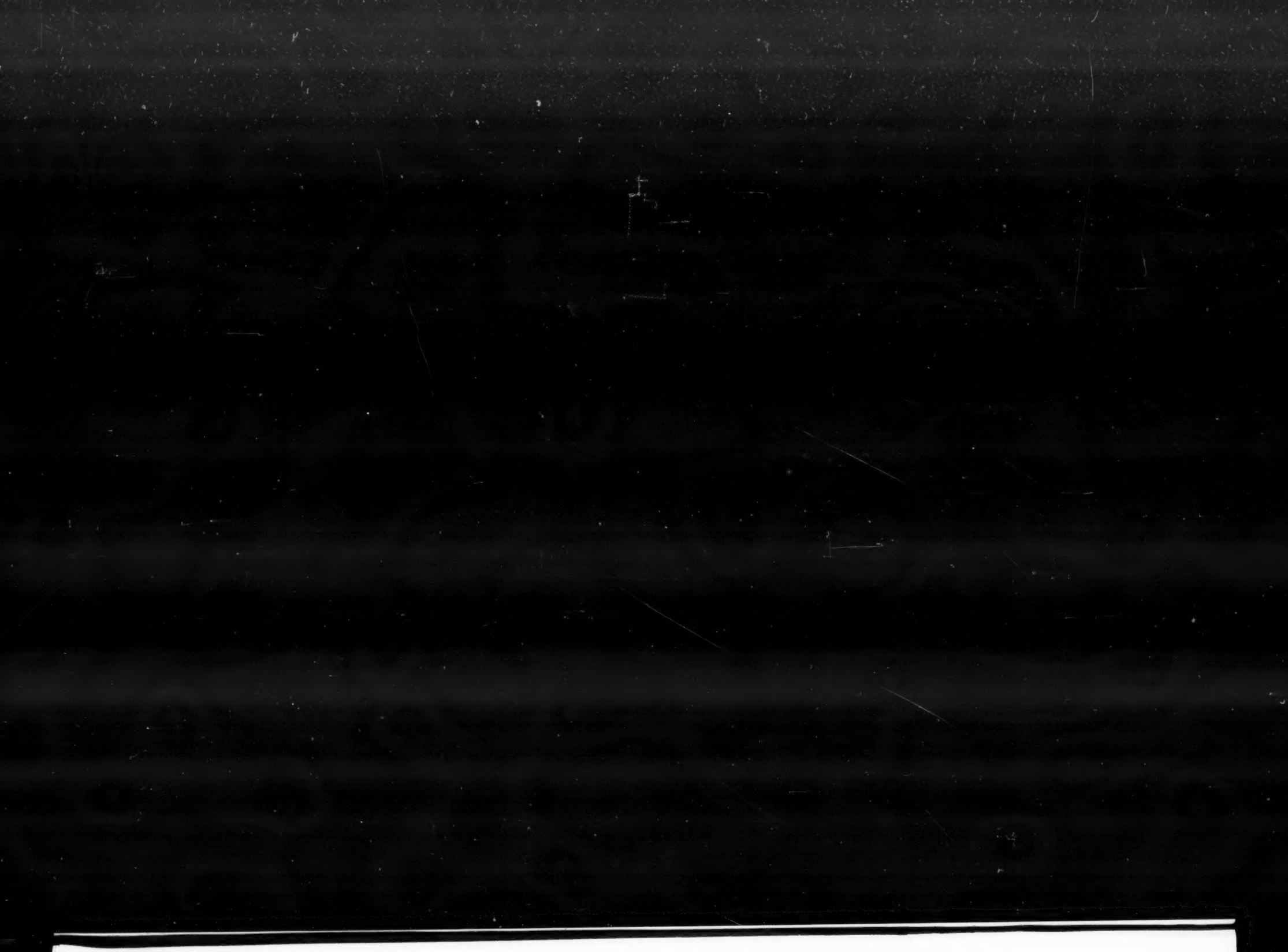

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Texas Overproducing 227,000 Barrels

Highest production in 1930, week ending Feb. 22, average daily output 2,699,096 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Curtailment in East Texas Begins May 1, and Is Expected to Cut This Down 150,000 Bbls. in Short Time

By James McIntyre

Lowest daily average crude oil production in the United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

With the Rusk-Gregg area in East Texas producing an average of 300,000 bbls. per day in the past week, an increase of over 72,000 bbls. per day when compared with the production of the week before, production rose to 2,441,839 bbls. in the United States, an increase of 23,408 bbls. per day. Oklahoma fell off 40,000 bbls. and West Texas nearly 20,000 bbls., but the Gulf Coast fields increased nearly 12,000 bbls.

From now on we must look to Texas for relief from overproduction. The State at present is overproducing 227,420 bbls. The application of proration to the East Texas fields will begin May 1 and should relieve the situation by 150,000 bbls. or more to begin with. Meanwhile operators in that area have been rushing wells to completion and the production for the week ending May 2 may stay around 300,000 bbls. per day.

What the country will produce in May depends mainly on the success of the Texas Railroad Commission in establishing a sane production policy in the Kilgore-Joiner-Lathrop area.

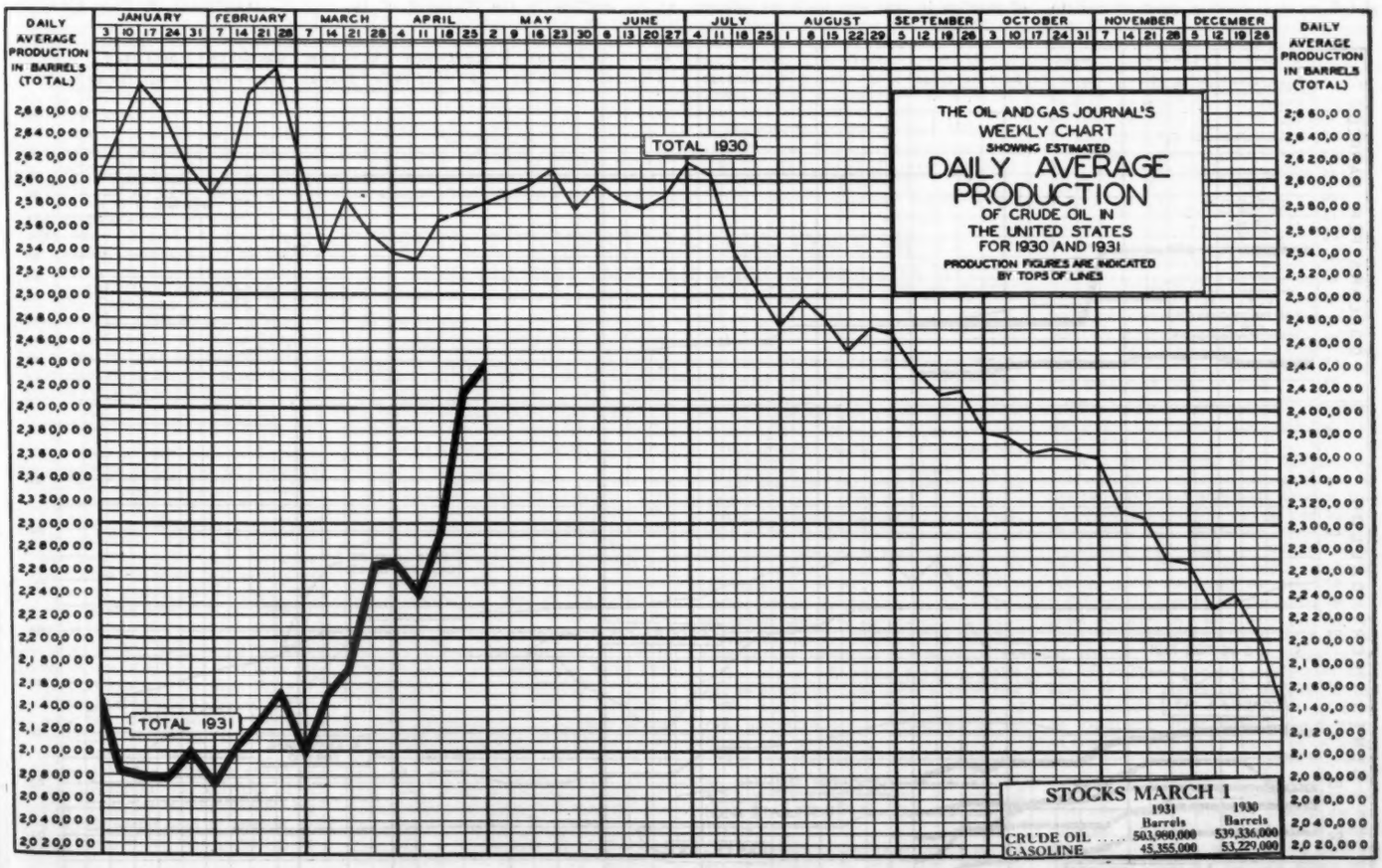
The posting of the highest Mid-Continent crude oil prices by major oil companies in the East Texas Field as against the cut-rate prices being paid by some oil purchasers in that district is believed to have had a powerful moral effect on operators there. With a chance to obtain 65 cents per barrel for crude oil operators naturally dislike to sacrifice profits by selling at from 17 to 30 cents per barrel. Realizing that to maintain a fair price for their oil it will be necessary to establish stabilization fewer of them will have the disposition to block the efforts of the State of Texas to have oil produced only as needed, keeping the surplus in storage in the ground. The Texas Railroad Commission has noted the increasing production in the Texas Gulf Coast and this week began a movement to reduce crude output in that field in line with other flush and semi-flush fields in the State.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended April 25 and a comparison with the previous week follows:

	April 25	April 18
Oklahoma—		
Oklahoma City	150,300	192,690
Seminole-St. Louis	155,780	155,111
Remainder of State	238,760	236,674
Total Oklahoma	544,840	584,475
West Texas—		
Hendricks	45,582	45,881
Yates	72,533	85,750
Remainder	101,484	107,573
Total West Texas	219,599	239,204
North Louisiana	39,130	39,020
Arkansas	46,790	46,995
North Central Texas	82,782	81,968
Texas Panhandle	57,260	55,670
East Central Texas	352,248	280,101
Kansas	109,350	109,750
Total Mid-Continent area	1,451,999	1,437,183
Gulf Coast	186,371	178,698
Southwest Texas	70,492	71,146
Eastern	112,000	111,000
Rocky Mountain area	94,727	95,904
California—		
Santa Fe Springs	72,500	71,750
Long Beach	88,750	89,000
Playa Del Rey	29,000	28,750
Elwood	37,000	34,250
Ventura Avenue	44,000	44,750
Kettleman Hills	26,000	26,000
Remainder of State	229,000	230,000
Total California	526,250	524,500
Total United States	2 441,839	2,418,431

→ **Increase 23,408 Bbls. Daily** ←



Retail Conditions Disturb Markets

Refinery Prices in Oklahoma Reflect Unsettled Conditions in Consumer Prices. Large Distributor Gallonage Gaining

By C. O. Willson

With conditions in the retail market, still receiving the major attention of refiners and jobbers, no improvement was noted the past week in Oklahoma refinery products. Spot quotations on refinery gasolines and natural gasolines and most of the fuel products from the heavy grades to the light distillates are slightly lower than they were a week ago.

The statements of individual companies and the weekly reports of the American Petroleum Institute show that the sensonal increase in gasoline movement from refineries to bulk stations is under way. Several of the larger refiners in Oklahoma had the largest shipments last week of any seven-day period since last fall. This movement was largely confined to company-owned stations and on long-time jobber contracts. There is still no general disposition to strengthen prices and most salesmanagers are now marking time to see what the first few days of the new month will develop.

The U. S. Motor grade of gasoline has been sold for resale as low as 3 cents in Oklahoma, and except for the A grade, natural gasolines are available at 1½ cents. Among the remaining products there has been some increase in the demand for neutral oils and bright stocks but price ranges are unchanged. The wax demand is again slow.

Retail Prices Muddled

Although the crude oil situation in its direct relationship to refinery markets, promises to improve within the next 15 days due to the proration of East Texas fields, the retail gasoline situation, of equal importance to most refiners, is still very much muddled.

Practically all the major distributors including the larger jobbers have completed or are making preparations to meet competitive conditions brought about by the action of the Standard Oil Co. of Indiana in introducing a third grade of gasoline known as "Stanolind Blue." However, they are not all adopting the Standard policy in regard to price or color and this has brought a feeling of uncertainty as to what will be the next general move in the tank wagon and retail price structures.

Typical Situation

Although not in the Standard of Indiana territory, the situation in Tulsa is a case in point. The regular price of gasoline in that city until the advent of a third grade was 16 cents and Ethyl Gasoline 19 cents. Both prices include a 5-cent tax. The middle of the month one company with several stations introduced a blue grade at 13 cents and at least two other companies made preparations to do the same. The 13-cent price was the same as charged by several price cut stations.

The situation became complicated on Saturday when the largest distributor in the city reduced its regular white grade to 13 cents and Ethyl 16 cents. This company has not introduced a third grade at its stations in the Standard of Indiana territory. Several companies made similar reductions. At this writing it was not known definitely what policy would be pursued in regard to prices for the third grade. It is believed that one or two companies at least will reduce their price on the third grade to 11 cents, the level established by several price-cut stations when the regular white grade of the larger distributors was reduced from 16 to 13 cents.

A similar situation obtains in many of the large consuming centers of the Middle West. Several companies have not adopted a third grade; others are either not coloring the third grade or are using some color other than blue and the remainder are waiting because they have not decided what is the best policy.

It is apparent that this jockeying for positions by individual companies may bring one of the worst price war conditions that the industry has ever known. The jobbers are particularly disturbed for their position is unsatisfactory regardless of whether they are buying on the spot market or on contracts.

Change in Gallonage

Regardless of how the tank wagon and retail situation is finally worked out, it is certain that the next few weeks will see a substantial change in the movement of gasoline from Oklahoma and other Mid-Continent refineries. The larger companies are determined to recover the gallonage lost over the past year to the price cutters and prices will be adjusted to whatever levels necessary to get the business. Should general price wars among the larger distributors develop the cut-price business would practically disappear.

The significance of this development in

(Continued on Page 111)

REFINED MARKET BAROMETER

Price trends in refined markets continued downward the past week. Outstanding for the week was the 10-cent reduction in bunker fuel oil prices at East Coast points bringing quotations to the lowest levels in the past 10 years. Fuel oils were not active at interior points although prices were being maintained at most points. Weakness in gasoline prices was reported from several areas and natural gasoline quotations were also generally lower. Distillates except for tractor fuels are moving slowly and the gas oil demand has also slumped. Reductions in cylinder stocks and bright stocks became effective at several refineries. Wax prices unchanged. Kerosene demand fair with no important changes in prices.

Mid-Continent—Gasoline demand improves but prices lower for domestic shipment. No change in kerosene. Natural gasolines lower. Fuels, particularly gas oils and distillates, weak and prices lower. Other products unchanged.

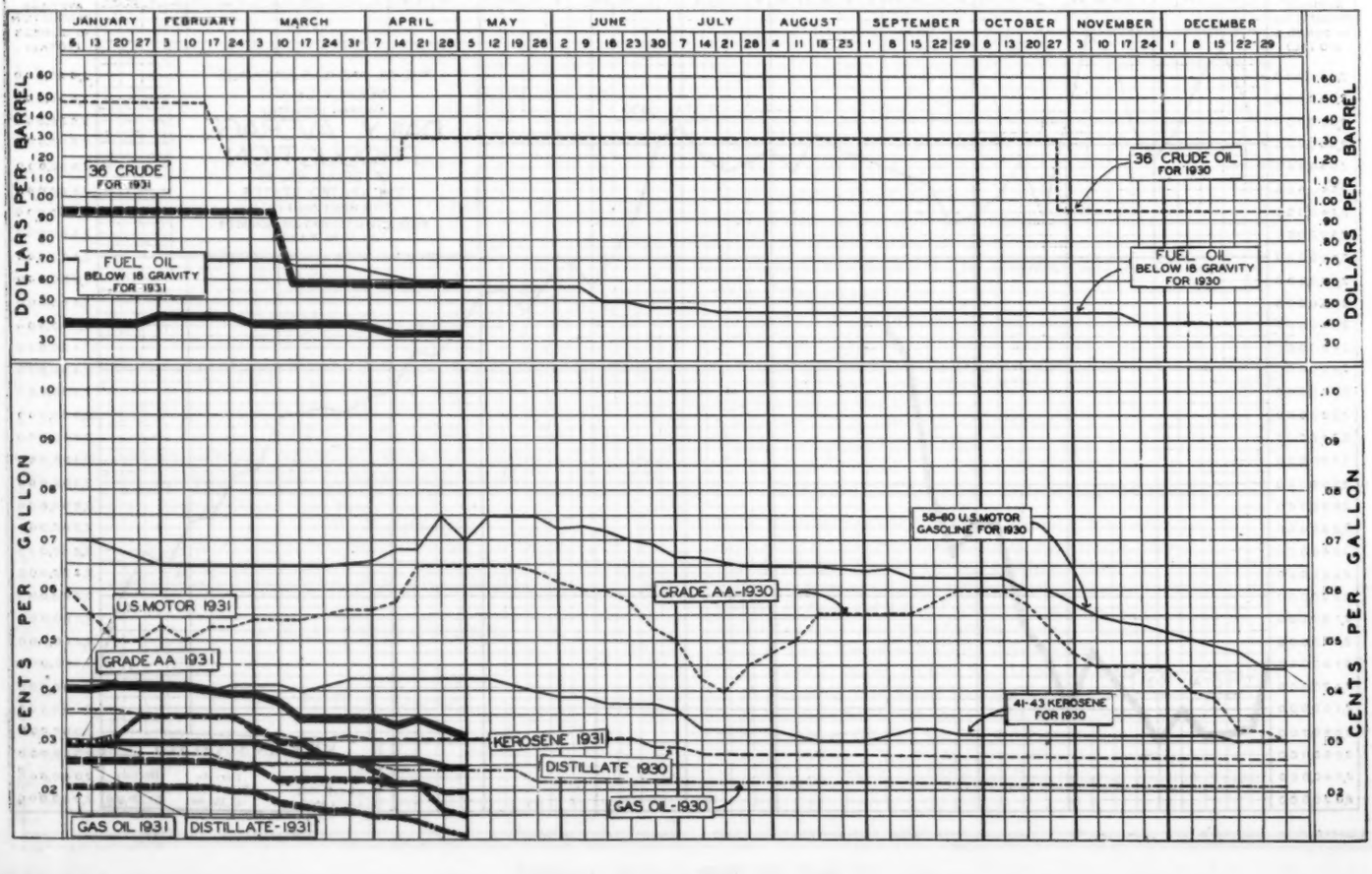
East Coast—Reduction in bunker fuel oil to 95 cents most important price change of week. Sale also being made under posted price. Gasoline situation still unsettled with East Texas development tending to increase importance of Gulf Coast competition. Diesel oil steady. Several grades of cylinder stocks reduced. Wax market soft.

Pennsylvania—Gasoline steady. Some grades of kerosene reduced. Light viscosity neutral oil prices reduced.

Chicago—Gasoline prices lower and market disturbed by conditions in retail end. Movement of all other products slow. Fuel oil, gas oil and distillate prices lower.

California—Refinery gasoline and natural gasoline prices lower. Fuels steady.

Gulf Coast—Market fairly steady despite crude price reductions.



Railroads May Build Gasoline Lines

Pennsylvania Official Says Rail Operators Prepared to Extend Services If Necessary to Protect Customers

By C. O. Willson

CLEVELAND, Ohio, Apr. 24.—The railroads in some parts of the country may find it necessary to construct gasoline pipe lines to serve refiners with plants along their rail lines and round out their transportation service, Elisha Lee, vice president of the Pennsylvania Railroad Co., told members of the National Petroleum Association here today at the closing session of the semiannual meeting.

Mr. Lee, a veteran railroader, explained the position of his company in his talk on "The Railroad's Viewpoint," at the afternoon session which was devoted to the general subject, "The Railroads and Their Competitors." He explained that while his company had no definite plan in mind to meet the new competition of the gasoline pipe line it was prepared to take whatever steps were necessary to protect its investment as a major transportation unit of the railroad industry.

He expressed the opinion that there was danger of pipe lines being built at points where they were not needed. In this connection he said that conferences between railroad and major oil company executives had been arranged to consider this problem for the purpose of preventing a useless expenditure in new transportation facilities. One company, he said, was holding up its plan for gasoline pipe lines pending the results of conferences to determine whether railroads can furnish adequate facilities at comparable rates.

The talk by Mr. Lee served to allay the fears of many oil men who have expressed apprehension regarding the attitude of the railroads towards pipe line, truck and bus transportation following a recent official statement issued by the American Railway Association. It has been feared that the railroads would attempt to circumvent the activities of oil companies by sponsoring unfavorable legislation which would tend to prevent the spread of competitive transportation facilities.

Contrary to this view, Mr. Lee assured the eastern association of refiners that the railroads did not intend to "handstring competitors" with legislation of a type from which they have suffered for many years. His talk was a plea for the "co-ordination of all transportation facilities" so as to afford the best and most economical transportation possible. In regard to the competition of the highways, waterways and airways he said that it would continue to be the policy of his company to combine these services with rail transportation whenever it would serve the best interests of its customers. He referred to certain phases of water transportation as "subsidized competition," claiming that the rates would not be as low as they now are if the carriers were forced to make a return on the total investment made by the Government in developing these waterways.

As an example of the Pennsylvania company's co-operation with shippers he explained the combination rail and truck hauls between New York and Philadelphia. The truckage business between these two cities has become large. It is estimated that the average cost per mile in the operation of these trucks is 30 cents. An arrangement has been worked out by which the truck bodies and loads are transferred to freight cars and the main haul between the two cities is by rail. At the destination the load is transferred back to the trucks. The total cost has been reduced to 15 cents per mile.

"I have no apologies to make for the railroads of this country," Mr. Lee concluded, "nor are we asking for sentimental treatment in the solution of our problems."

Oil Company Viewpoint

The oil business will insist on the unrestricted use of its transportation facilities including pipe lines, ships, trucks and buses wherever they are more economical than rail transportation according to Willis Crane, traffic attorney of the National Petroleum Association, who spoke on "The Shippers' Viewpoint."

In his talk Mr. Crane emphasized the necessity of the oil companies being unhampered in their efforts to reduce transportation costs which in turn are passed on to the consuming public. In regard to waterways he said that in 1929 water transportation of petroleum products totaled 100,000,000 tons and 70,000,000 tons by rail.

He spoke favorably of the recent action of the Central Freight Association which has approved substantial reductions in short hauls for petroleum products. This action which is subject to the approval of the trunk lines, will permit the carriers to compete with trucks on short hauls from refineries.

Public Highways

The users of the various types of motor vehicles are paying the bulk of the cost of constructing and maintaining public highways according to data presented by John E. Walker, specialist in taxation for the National Automobile Chamber of Commerce.

Mr. Walker's address was largely devoted to refuting the statements often made that truck, bus and other types of commercial cars in effect offer a subsidized competition to railroads and other transporters. It is claimed that these motors only pay a small part of the total cost of operation the remainder being paid from Federal, state and municipal taxpayers.

In reply to these claims, Mr. Walker gave detailed data showing that motor vehicles of the commercial type were paying more and more of the total cost of operation. Some of the key facts explained by Mr. Walker are as follows:

"Proportion of total highway bill contributed from special motor vehicle taxes four times greater now than in 1921.

"Registration and gasoline taxes on motor vehicles now equal total expenditures for state, or main highways, and almost twice maintenance cost of all state and local highways.

"Twenty-one states do not levy general property taxes or make appropriations for state highways, and accordingly there is no rail contribution in these states for this purpose.

"Special motor vehicle taxes have increased more than 500 per cent from 1921 to 1929.

"The common carrier motor truck of average size (three tons) pays 18 times as much as the private automobile.

"The common carrier bus pays 22½ times as much in special taxes as the private automobile.

"Rail payments to state highway program now negligible."

Blames Producers

L. V. Nicholas of Chicago, former president of the National Petroleum Marketers Association, blamed overproduction of crude oil and duplication of marketing facilities for the troubles of the oil industry. He said in part:

"The oil industry must reverse its thinking and the demand for new production of crude oil must come from the gasoline pumps and not the demand for new gasoline pumps come from the producer of crude oil.

"In the matter of legislation it seems to me about all the industry needs is laws that will give the same property rights to crude oil as pertain to other minerals. The present laws as applied to production of crude not only legalize theft but promote it, dignify it, and put a high premium on it.

"As I see the future, petroleum marketing will become a well-recognized form of semipublic service—not free service that is designed to disguise and make palatable a faulty price structure, but service that is organized to meet broad public requirements on the lowest possible margin of profit commensurate with fair and adequate return on invested capital.

"We all realize that by closing up at least 50 per cent of our present marketing outlets, costs could be reduced materially, probably as much as 3 to 4 cents per gallon, with no impairment of service; in fact, it probably would be improved.

"If wise leadership and constructive counsel prevail, the present narrow spread between tank car price and the retail price to the consumer at service stations will be maintained and the battle between sound economics and wise public policy on one side, and the forces of industrial irresponsibility, evasion, opportunism and compromise on the other side, will be fought through to a final and definite finish.

"The longer we delay squarely meeting the issue, the heavier the price we will inevitably pay.

"It is my belief the battle has now begun and that it is simply going to be too bad for those who have ignored and disregarded the storm signals and kidded themselves into believing that, while sound economics and the theory of the 'survival of the fittest' might apply to others, it did not apply to them.

"If we are now in the beginning of the final struggle in which only the fit can hope to survive, then it is only logical to assume that by far the majority of the oil companies whose stocks have had more or less spectacular careers on the curb and the big exchange are going to be wiped out either through the medium of consolidations and mergers or receiverships, and, while the speculative hopes of many an investor are going to be shattered and the pride of many a promoter who had come to consider himself an industrial 'Poo-bah' is going to be humbled, the industry, as a whole, will be very much better off and the public will be better served."

ANNUAL MEETING

The annual meeting of the National Petroleum Association will be held at the Hotel Traymore, Atlantic City, September 16, 17 and 18. The next semi-annual meeting will be held at the Cleveland Hotel, Cleveland, Ohio, April 21 and 22, 1932.

The manufacturing department of the association will visit the refinery of the Sinclair Refining Co. at Wellsville, N. Y., June 26. P. S. Tarbox, general manager of the Independent Refining Co., Oil City, Pa., is the trustee in charge of the department.

The Safety and Fire Marshals will meet at Warren, Pa., May 28. James H. Herbert of the Standard Oil Co. of Ohio, Cleveland, is in charge. Safety team contests will be held.

On June 12 and 13 chemists and others connected with the manufacturing departments will be the guests of the Standard Oil Development Co. at the Bayonne, N. J., refinery of the Standard Oil Co. of New Jersey. The Bureau of Standards is co-operating in the program for the two-day meeting.

CONDUCT INVESTIGATION ON USE OF GASOLINE AS HOUSEHOLD FUEL

CLEVELAND, Ohio, Apr. 23.—Household heating using gasoline as fuel may furnish another outlet for petroleum, according to H. L. Horning, president of the Waukesha Motor Co., who spoke this morning at the opening session of the semiannual meeting of the National Petroleum Association.

Mr. Horning said experiments were now being conducted to determine the feasibility of utilizing heat from internal combustion engines for heating. The work is based on the well-known fact that approximately 10 per cent of the potential heat in gasoline is used in the operation of engine, the remainder being dissipated in cooling systems as waste heat. Mr. Horning said it was too early to state whether the experiments now being conducted would prove practicable.

Mr. Horning predicted an increasing demand for gasoline, due in part to improvements in design of internal combustion engines which are constantly widening their utilization in the power field. He predicted smaller engines of greater horsepower which enable the gasoline-driven engines to replace other types. He complimented the refiners on the improvements made in the specifications of lubricants and stressed the part that lubrication plays in the operation of engines.

Speaking generally of business conditions and probable trends in the future, Mr. Horning said that men in all lines of industry should use their influence in promoting the following program:

"To develop methods of production which will give a better product.

"To decrease the unit price to the public.

"To intelligently oppose all special taxation which tends to decrease the use of the product because of high costs.

"To reasonably control the facilities of production.

"To control production by keeping a reasonably accurate picture of demand.

"To develop new markets by development of new invention and research.

"To oppose all trade barriers which tend to suppress trade between countries.

"To widen the freedom of action of trade associations for the control of facilities and production.

"To conserve natural resources by giving industry the benefit of production which will prevent dumping of raw and finished products below the cost of production.

"To stabilize industry so as to permit the development of profitable and economical distribution."

Unit Operation in Eastern Venezuela

Creole Completes Arrangements With Other Operators for Elimination of Costly Duplication of Effort

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 27.—Creole Petroleum Corp., Venezuelan operating subsidiary of Standard Oil Co. (New Jersey), has concluded negotiations with other companies operating in that country whereby 493,629 acres (771 square miles) have been brought under unitization agreements in eastern Venezuela.

Participants in the unitization agreement with Creole include Venezuelan Atlantic Refining Co., Cordillera Petroleum Corp. (Sinclair), Mexican Seaboard Oil Co., Lago Petroleum Corp. and Cia. Espanola de Petroleos.

In an interview with the representative of The Oil and Gas Journal, an official of the Creole Petroleum Corp. outlined the successful conclusion of the company's negotiations for unitization in its territory in Venezuela as follows:

Advantages Cited

"The objective of unit operation is conservation and economic exploitation of crude petroleum. The pooling of contiguous land holdings of several companies or individuals; the development of such pool as a unit to the mutual profit of all participants in proportion to their respective interests is, broadly speaking, unitization. It avoids ruthless competitive drilling, duplication of drilling and producing organizations and enables one set of facilities (pipe lines, etc.) to serve the whole unit. Under efficient management, it enables the greatest possible recovery of crude at lowest cost.

"What unitization would have meant to the operators of the famous 'golden lane' of Mexico is obvious to anyone familiar with the cut-throat competition conducted there during its short life. What it would have saved in terms of money is subject to a variety of guesses and probably has never been closely estimated. Using the Cia. Transcontinental de Petroleo's investment in main pipe lines and tanker loading facilities as a yard stick, it must have cost all operators in that pool in excess of $50,000,000 for similar facilities. Had unitization been in effect, an investment of between $10,000,000 and $15,000,000 would probably have served the same purpose, to say nothing of the saving which might have been realized on operating expenses, and avoidance of duplicate building of railways, roads, camps, etc. Furthermore, the number of wells drilled might have been reduced by 50 per cent or more, without having decreased the ultimate yield; and possibly enhanced it.

"While the foregoing is at best a hazy estimate of what benefits might have accrued in a certain field had unitization been in effect, a more accurate estimate can be made of what wastes would have occurred in two American fields, had unitization not been adopted.

Examples in United States

"In the Salt Creek Field of Wyoming, six companies pooled an aggregate of 10,400 acres. It has been carefully estimated that the saving by unitizing this acreage is at least $11,650,000, not taking into account savings resulting from shutting oil in the ground when not needed, reduction in waste of gas by avoiding high peak production, additional pipe line facilities, etc.

"Unit operation in the Rock River Field of Wyoming will probably cut drilling costs $3,500,000, producing costs $2,000,000 and other expenses probably $500,000—the estimated saving in this field being $6,000,000—over a productive area of 1,380 acres.

"The Standard Oil Co. (New Jersey) is a believer in the principle of unitization. It has, during the past year, through its subsidiary in Venezuela, the Creole Petroleum Corp., instituted and concluded negotiations with other companies whereby 493,629 acres (771 square miles) have been brought under unitization agreements in eastern Venezuela.

"The shaded areas on the accompanying map show the acreage unitized. The pipe line shown on the map, connecting the Quiriquire Field with the tanker loading terminal at Caripito, belongs to Creole and is now in operation. An extension of this pipe line would conveniently serve approximately one-third of the aggregate pooled area. Probably not more than two additional main lines with accompanying loading facilities would be required to serve the whole unitized area. Were it not unitized, but developed by individual owners installing their own facilities, probably seven main pipe lines with accompanying tanker loading facilities would be required to serve the same area.

"The acreage embraced in these pools is covered by five separate agreements as follows:

Participants—	Interest	Acr'ge
Creole Petroleum Corp.	49.41%	
Venezuelan Atlantic Ref. Co.	29.77%	
Cordillera Pet. Corp. (Sinclair)	20.82%	30,042
	100.00%	
Creole Petroleum Corp.	61.10%	
Venezuelan Atlantic Ref. Co.	38.90%	19,380
	100.00%	
Creole Petroleum Corp.	47.84%	
Venezuelan Atlantic Ref. Co.	32.16%	
Cordillera Pet. Corp. (Sinclair)	20.00%	39,192
	100.00%	
Creole Petroleum Corp.	43.37%	
Cia. Espanola de Petroleos.	33.32%	
Lago Petroleum Corp.	23.31%	241,321
	100.00%	
Creole Petroleum Corp.	54.56%	
Mexican Seaboard Oil Co.	45.44%	163,694
	100.00%	
Total acreage		493,629

Terms of Agreement

"To generalize the usual terms of the various agreements: Each party agrees to maintain its title to the acreage it

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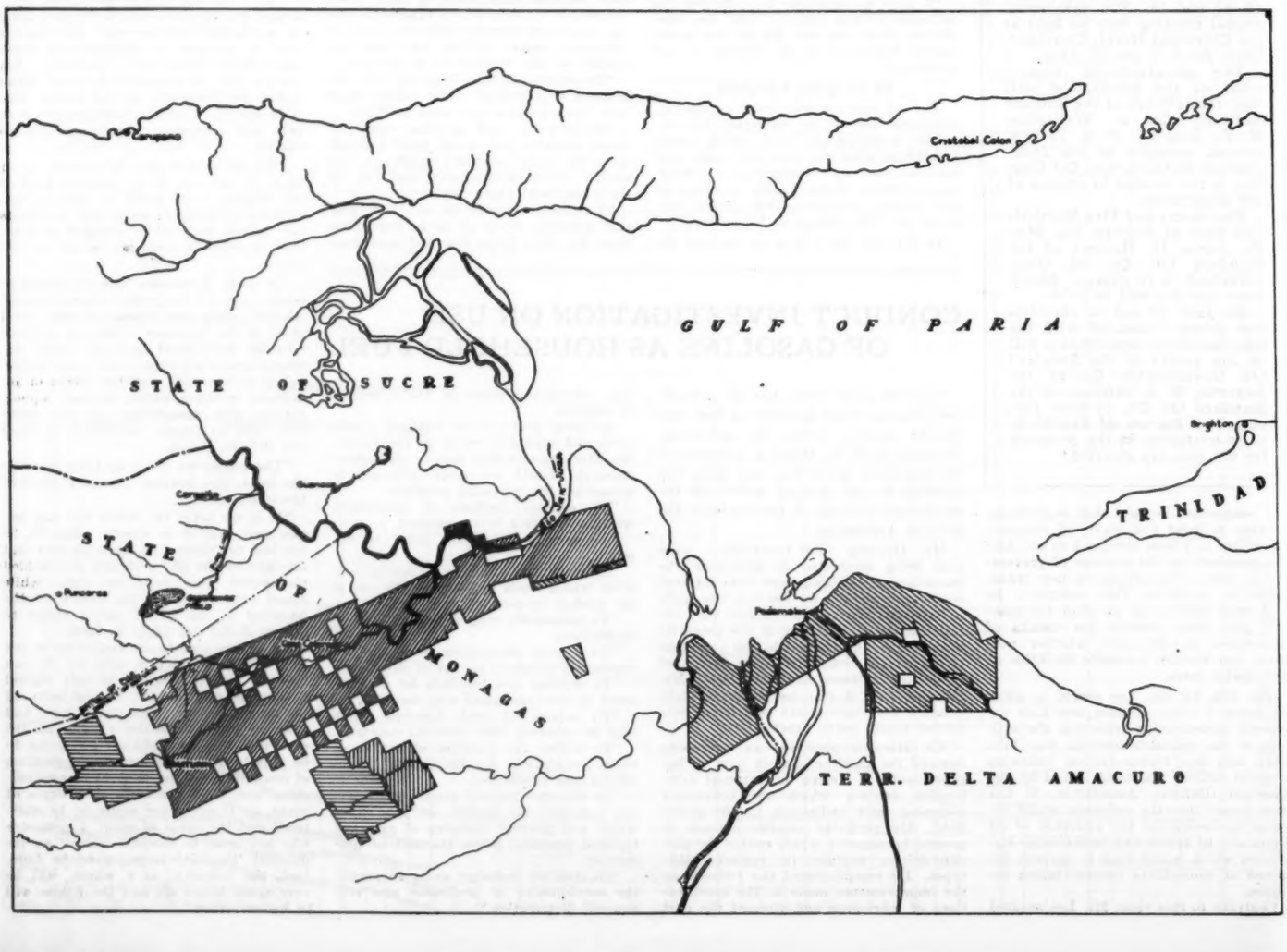


New Line Into East Texas Completed

The Texas Pipe Line Co. Now Running Crude Through Extension From Main Line System to Kilgore Field. Present Capacity 25,000 Bbls.

By Nell Williams

HOUSTON, Tex., Apr. 27.—Another major pipe line outlet for the new East Texas fields providing a direct market on the Gulf Coast has been opened with the completion by the Texas Pipe Line Co. of its line out of the Kilgore Field, northern Rusk County. Work on this line was completed Saturday and first oil through it to the coast was being run over the week-end.

This line, which in itself is only 52 miles long, extends from Kilgore southward to a point near Douglas, in western Nacogdoches County, where it ties into the company's main system. The tie-in is on the Corsicana-San Augustine 8-inch line, which links the Dallas-Port Arthur system at Corsicana with the North Louisiana-Port Arthur trunk at San Augustine.

The Kilgore extension consists of 10-inch pipe, electrically welded in the field. This will provide an outlet for 25,000 bbls. daily of East Texas crude, 10,000 bbls. of which for the present will be diverted to the coast by way of Corsicana and 15,000 bbls. by way of San Augustine, as indicated in an accompanying map. This being accomplished by a split in the line at the Douglass tie-in, whereby oil can be pumped either westward or eastward through the Corsicana-San Augustine line.

Tentative plans of the company for an early increase in run capacity from East Texas from 25,000 bbls. to 45,000 bbls. daily, this to be accomplished by filling in unlooped portions in the main line from San Augustine to Port Arthur. That 8-inch line at present is looped at intervals and a total of only a little over 50 miles of loop remains to be completed. In these plans, a pumping station also will be put in north of Douglass on the Kilgore branch.

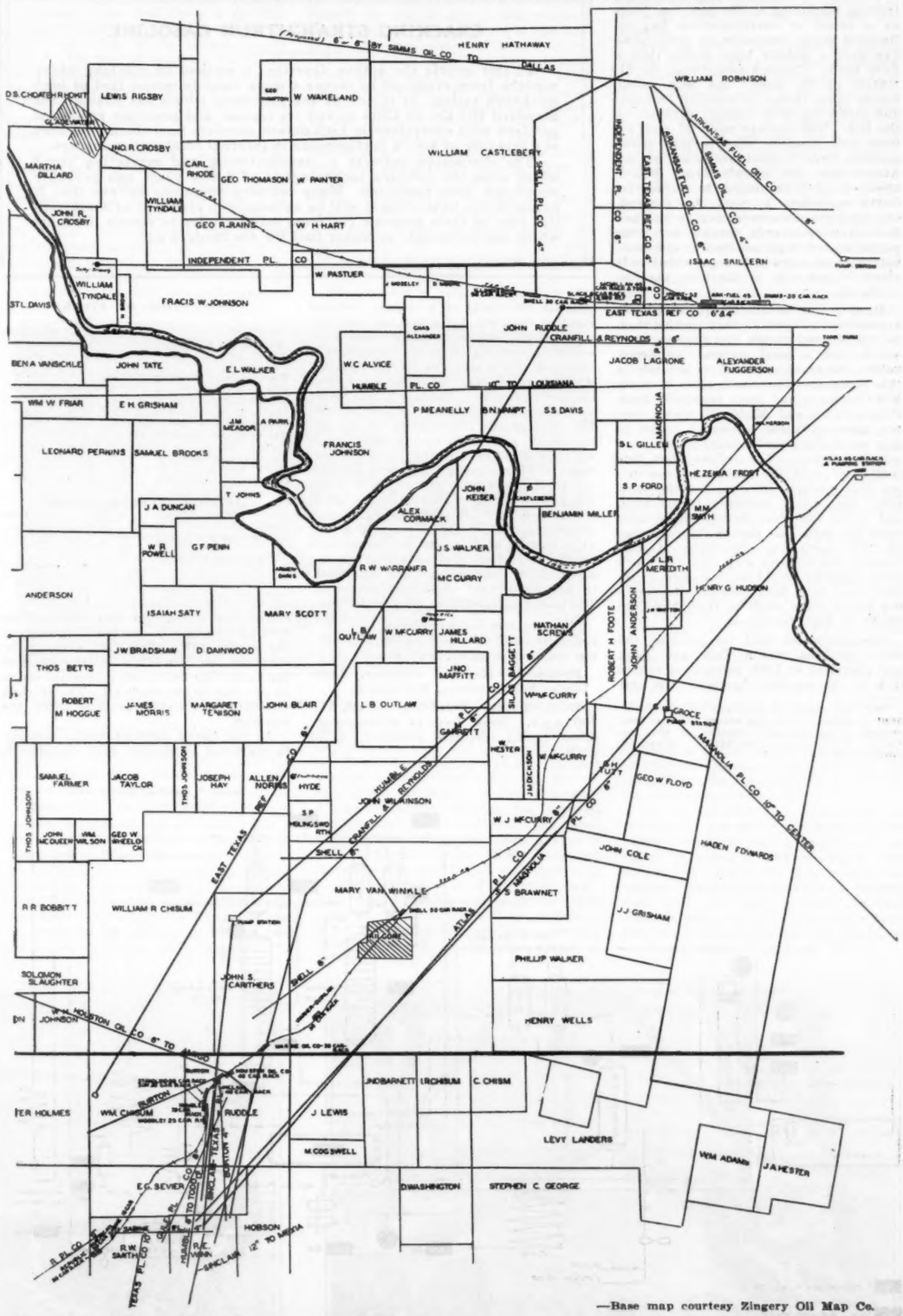
The only other through lines out of East Texas are Magnolia Pipe Line Co.'s 10-inch branch from Kilgore and Lathrop which ties into that company's trunk line from North Texas and Oklahoma to Beaumont, and Humble Pipe Line Co.'s 8-inch line from Kilgore to its Van-Louisiana line. Gulf Pipe Line

Map of Kilgore extension.

Co., however, is completing a line out of the area to a connection with its trunk system from North Texas to the coast.

The Texas Pipe Line Co. completed its new line six days ahead of planned as work was not expected to be finished before May 1. The entire project took less than 30 days. Laying of the line was done under contract with the N. A. Saigh Co., of San Antonio, with A. O. Smith Corp., of Milwaukee, Wis., furnishing the pipe and welding it in the field.

OUTLET SITUATION IN LATHROP AND KILGORE AREAS



—Base map courtesy Zingery Oil Map Co.

Map showing loading racks, short lines to racks, and major outlets to the Lathrop and Kilgore areas, Gregg and Rusk Counties, East Texas. Some of these lines are now under construction, but the majority of those shown are in service. Arkansas Pipe Line Co.'s 8-inch, from the Lathrop Pool to Shreveport, is under construction as is the Atlas Pipe Line Co.'s 8-inch to Shreveport. These two lines could not be shown on the map, but pump stations to which they will connect, are shown. Sinclair-Texas Pipe Line Co.'s 12-inch from Kilgore to Colonels Station, and the Texas Pipe Line Co.'s 10-inch to Nacogdoches are shown in the southern part of the Kilgore area, as is also the Humble Pipe Line Co.'s 10-inch to Todd Station.

Cracking Naphtha At High Pressure

Large Yields of High Antiknock Motor Fuel Secured by Cracking Gasoline Fractions From Crude Oil

By E. B. McConnell
Standard Oil Co. of Ohio*

CRACKING STRAIGHTRUN GASOLINE

In this article the author describes a method of cracking heavy naphtha from crude oil to secure a more volatile motor fuel of high antiknock rating. It is one of the processes which has enabled the Standard Oil Co. of Ohio to sell its regular and premium grades of gasoline with exceptionally high octane numbers now commonly used as a measure of knock performance in internal combustion engines.

The discussion reflects a manufacturing and marketing trend which even the refinery technologists of a few years ago probably would not have predicted. Many refinery operators believe that it points to the time when it will be necessary to crack all or a substantial part of their gasoline cut from many crudes to secure products which are acceptable as motor fuel for the modern car.

The highly competitive character of petroleum marketing in the past few years as a result of overproduction has influenced many companies to place gasoline upon a quality basis rather than a price basis. Through advertising, the attention of the public has been called, among other things, to volatility, mileage and antiknock, with especial emphasis on the last. The average motorist now expects and demands that regular priced gasoline have a good antiknock rating. Accordingly, the manufacturing departments have been forced to adjust refinery operations to meet this demand. Cracking processes operating on gas and fuel oil were already turning out large quantities of high antiknock distillate, but in most cases this represented only about 50 per cent of the total gasoline produced.

Many refineries are fortunate to have a geographical location that enables them to run selected crudes, the gasoline from which has a good natural antiknock value. However, most of us are not in this position. The crude naphtha from Mid-Continent and more especially from Pennsylvania and Michigan crudes does not have sufficient antiknock value to give satisfactory performance in the present day motor. The refiner then was confronted with the problem of converting this product into marketable gasoline. He turned naturally to cracking, and as the literature shows, considerable work has been done during the past year on this operation. Therefore, it was thought that refiners with poor antiknock crude naphtha would be interested in results that have been obtained by cracking heavy crude naphtha from Mid-Continent at high pressures.

The equipment used for cracking the heavy naphtha was a Tube and Tank unit operating at 1,000 pounds per square inch on the reaction chamber. The unit consists essentially of a furnace, vertical reaction chamber, tar separator, and two conventional 10-plate bubble towers in series. Fresh charge passes through suitable heat exchangers to an accumulator where it mixes with hot cycle stock from the bubble towers. The separator, towers and accumulator are held at 100 pounds. Hot feed pumps take suction on the accumulator and discharge through intercondensers (located in the vapor line between the tar separator and primary tower) to the furnace. There was a possibility that the accumulator temperature would run so high that the light ends of the naphtha would be vaporized, but as a matter of fact, the per cent fresh in the total feed was so high that the accumulator temperature ran sufficiently low to prevent this from occurring. The operating conditions were as follows:

Temperatures—Accumulator, 370° F.; coil inlet, 575° F.; coil outlet, 925° F.; top reaction chamber, 880° F.

Pressures — Reaction chamber, 1,000 pounds; bubble towers, 100 pounds.

Running rates—Total feed to coil, 11,700 g.p.h.; fresh feed to accumulator, 5,800 g.p.h.; distillate produced, 4,750 g.p.h.

INSPECTION OF STOCKS

	Fresh feed	Distillate
Gravity °A.P.I.	51.0	55.5
I.B.P. °F.	145	93
Per cent recovered @ 158°F.	....	9.0
Per cent recovered @ 212°F.	5.0	22.0
Per cent recovered @ 284°F.	23.0	50.0
Per cent recovered @ 374°F.	92.0	90.0
Per cent recovered @ 392°F.	96.0	93.0
Per cent recovered @ 410°F.	98.0	....
F.B.P. °F.	460	400
Octane number	....	70
Color	....	20
Gravity of tar °A.P.I.	....	10

YIELDS ON FRESH CHARGE

	Per cent
Distillate from unit	82.0
Absorption plant gasoline	2.0
Total distillate	84.0
Tar	5.0
Gas	11.0

The heavy naphtha was obtained by making two poorly fractionated cuts at the crude stills. The light cut can be ethylized or blended with the cracked distillate. The heavy cut represents about 15 per cent on the crude oil. The cracked distillate is finished gasoline after lye washing.

As the heavy naphtha might possibly be marketed if blended with casinghead, blends were made to bring both the cracked distillate and the heavy naphtha up to 27 per cent recovered at 212° F.

Results Obtained

The resultant distillations were as follows:

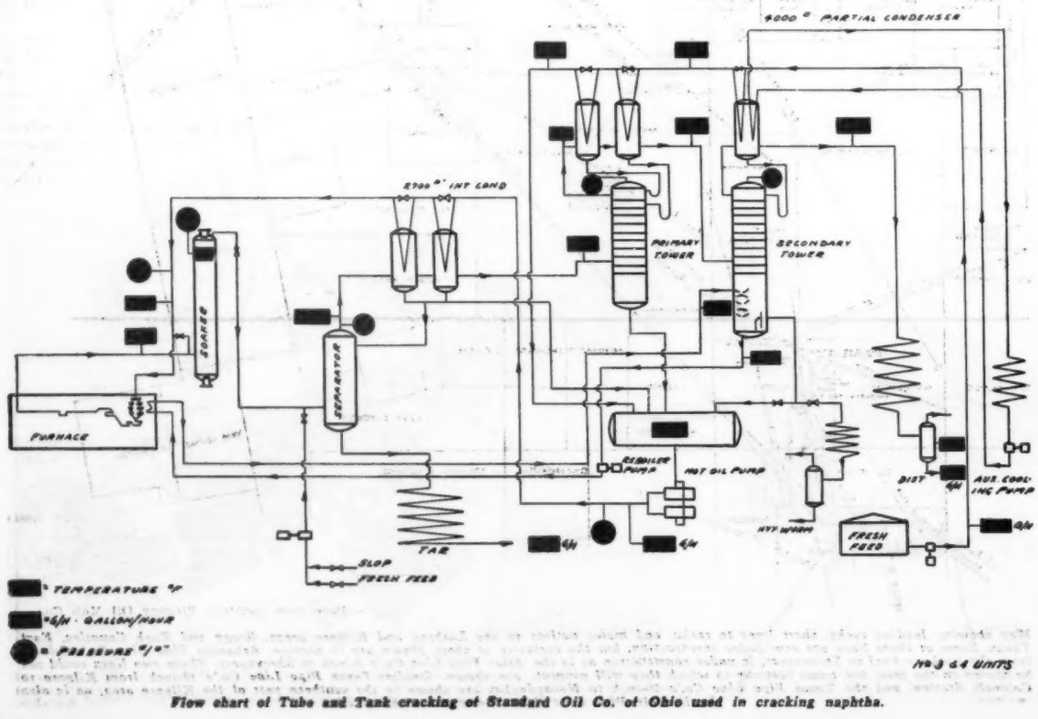
	Heavy naphtha plus 31.8% casinghead	Distillate plus 13.8% casinghead
I.B.P.	94	96
Per cent 212	27	27
Per cent 284	43	54
F.B.P.	432	400
Octane number	55	71

Not only does the heavy naphtha blend have a very low knock rating, but it is also low at the 284 point. It obviously is not marketable as a high quality fuel. On the other hand, the distillate blend is satisfactory in every respect.

The big improvement in knock rating naturally cannot be obtained for nothing. There is incurred a degredation of the charging stock and a processing expense. However, the total cost is not excessive and the operation is perfectly feasible from an economic point of view, especially if the crude naphtha cannot be sold at any price.

The results given in this paper are not merely experimental, as the operation has been carried on currently for almost a year. The method outlined offers a possible solution to those refiners who are confronted with the problem of improving the antiknock quality of their crude naphtha.

*Mr. McConnell is assistant to vice president in charge of manufacture. Paper presented at semiannual meeting of the National Petroleum Association, Cleveland, Ohio, April 24.



Flow chart of Tube and Tank cracking of Standard Oil Co. of Ohio used in cracking naphtha.

Local Advisory Board Suggests Increase in East Texas Allowable

FORT WORTH, Tex., Apr. 28.—At a proration meeting held at Longview, April 26, it was recommended by local advisory committees that East Texas' daily allowable production be increased from 130,000 bbls. to 160,000 bbls. to start with. Under the proposed schedule the Joiner area would be allowed 65,000 bbls. per day, Kilgore 60,000 bbls. and Lathrop Pool 35,000 bbls. per day.

Kilgore producers argued that their pool should be given a greater allowable and that Lathrop and Joiner operators were given too high an allowable in comparison to the number of wells on proven acreage and potential output.

The railroad commission will take this new amount under advisement and a revision of the first order is expected Tuesday or Wednesday, allowing the district a greater production. Proration is not yet in effect in any of the pools.

SHREVEPORT GEOLOGISTS

SHREVEPORT, La., Apr. 27.—The regular monthly meeting of the Shreveport Geological Society will be held in the Chamber of Commerce rooms, Slattery Building, at 7:30 p. m. on Friday, May 1. The subject will be "Correlation and Nomenclature of North Louisiana Formations;" special attention to be given to the correlation of the Eocene beds found to outcrop in northwest Louisiana and northeast Texas.

The discussion will be led by H. K. Shearer, geologist of the Standard Oil Co. of Louisiana, who is chairman of the committee on standardization of geological names and terms of formations found to outcrop and encountered in drilling of deep test wells in North Louisiana. Cross sections will be available to create interest and encourage discussion by the members.

Unusual Setup on Gulf Coast Deep Test

Location in Marsh Presented Extraordinary Difficulties in the Transportation of Heavy Equipment Needed

By Nell Williams

HOUSTON, Tex., Apr. 25.—The evolution of wildcatting on the Gulf Coast out of the realm of a promiscuous, haphazard venture is no better pictured than in a deep test now being drilled by the Humble Oil & Refining Co. in the southern part of Jefferson County, Texas. The preliminary geophysical exploration necessitated and the tremendous size and strength of the equipment set up under conditions which tax engineering ability bespeak the extent present-day Coastal operators go in search of new fields.

Known as No. 1 McFaddin, this is one of the most interesting tests now under way on the Gulf Coast, not only from its location in wildcat territory but also because of its setup. In the latter it marks the introduction of new and larger equipment in the Coastal district and innovations in operation coincident with efforts to facilitate deeper and more thorough exploration.

This test is a rank wildcat, being the first on one of the most recently discovered geophysical salt dome prospects. The prospect is on the McFaddin ranch, well known to everyone in South Texas, as one of the largest remaining cattle ranges in the State. The particular part of the ranch where the prospect is located is in the vast marsh district bordering the Gulf of Mexico, the test being within 6 miles of the beach.

Easily seen for miles on a clear day over the low, flat country, the test is not so readily reached except by boat through artificial canals and lakes. Early attempts to drag material to the location from the landward side by caterpillar tractors bear witness to this as they proved next to impossible and the operators were forced to abandon them in favor of barging through canals.

Largest Derrick on Gulf Coast

The chief claim of this test for distinction is its derrick, which is the largest by far of any which have been used before on the Gulf Coast. From the derrick floor to the crown block is 164 feet, and, as the derrick floor is 10 feet above the level of the marsh, the top of the derrick is 174 feet high. This is in contrast to the usual 122-foot derrick on most deep tests on the Coast.

The derrick has been provided that size to permit the handling of 30-foot joints of drill stem in fourbles. Also 6⅝-inch pipe is being used and a smaller derrick would not provide sufficient room for stacking. By the longer points, considerable time is saved in coming out of and going into the hole, which is the equivalent of faster drilling. At the same time, the setup enables the drilling of larger hole, which will facilitate deeper drilling.

Also new to the Gulf Coast is the 325-horsepower gas engine which drives the drawworks. This is the largest engine used on this type of work on the Coast. This installation includes a 6x42 reverse unit. The drawworks is not new but is of heavy duty, hydraulic type. A 125-horsepower gas engine operates the 6x16 pump.

Fuel was possibly the most serious problem faced in drilling the test and this proved an important factor in the selection of gas engines for power as gasoline could be used in these. Due to the wildcat location there was no gas available and it would have been difficult to get fuel oil in for boilers as the nearest railroad point is sone 15 or 20 miles distant. Gasoline can be brought in in drums, making it easily transported on barges. Electric power would have required the stretching of miles of high line across the marshes, which was not feasible for the one operation.

Steam has not been employed for a number of reasons. In the first place it would have been difficult to get fuel, as mentioned. Also considerable trouble would have been experienced in moving in boilers and setting them up in the marshes. Lastly, the marsh water would not have been adaptable for boiler use without treating, whereas it can be used for radiators in the gas engines.

Getting equipment and material into the location has presented a problem although the test is only a comparatively short distance from good roads and supplies. All other means of access having failed, operators have been using a small canal, which leads from near the beach road inland across the marshes, through a lake, and thence across more marshes to the location, making a total water haul of around 6 miles. Due to the smallness of this canal, through which only very small barges can be towed, it originally was not thought feasible to use it, especially as at times the water is almost too low for boats, and attempts were made to drag equipment across the marshes from the landward side but even the caterpillars became bogged and these efforts were abandoned.

The canal had been dredged long before the present operators took over the prospect and when dug by the owners of the McFaddin ranch it was not intended for that purpose but rather was the result of the excavating of dirt to provide a small roadway through the marshes for the cattle on the ranges. The canal which follows along the roadway thus is only a narrow water filled ditch not more than 12 to 15 feet wide and only of shallow draft. Use of the cattle roadway was considered and much time was spent in efforts to grade it up sufficiently for the hauling of heavy equipment but the dirt thrown up consisted mostly of mulk and never dried out or packed hard enough for that purpose and during, and for long after rains was absolutely impassable.

Thus, in lieu of any plans for dredging an adequate canal for further efforts to provide a road, the company has been and is using the small canal. Except for a small amount of material which it was possible to get in at first across the marsh from the land side, all equipment has been moved in through this canal.

Two small barges, not over 6 feet wide nor longer than 20 feet, have been in service, these being towed back and forth by an improvised tug boat, consisting of a small open boat powered by an ordinary Ford engine. On these barges it has not been possible to haul any large or heavy units such as needed on this deep test and as a consequence everything had to be "knocked" down and transported in small parts or sections to be reassembled at the location. This necessitated numerous trips in and out and a slower and more tedious operation than in most other wildcat setups on the Coast.

Transport Limit

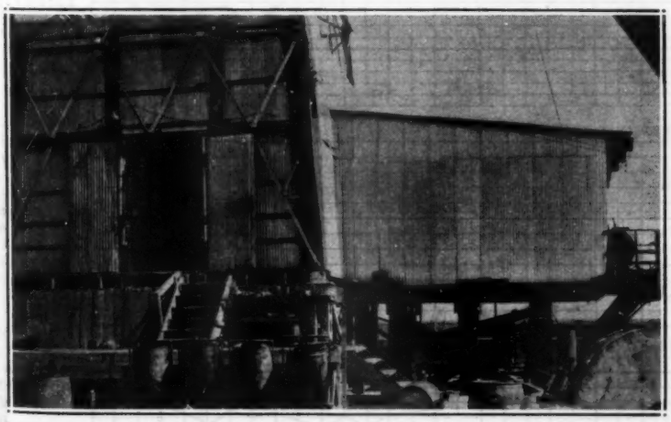
These conditions would have made it virtually impossible to get boilers into the location for the drilling by steam, as the present barges could not handle a boiler large enough for this test. The gas engines in use permitted of disassembling and thus were transported easily. The swampy location also was not favorable for the setting up of boilers, which would have required the driving of a great number of additional piling and building of greater platform space as compared with the requirements of the present setup which calls for only two pieces behind the drawworks, these utilizing the same foundations as those of the derrick.

Foundations for a 164-foot derrick and the other heavy units presented a serious problem, particularly in view of the soft and unstable marsh land, under water most of the time. This obstacle, however, has been met, and, despite the dead weight of 205,648 pounds, or approximately 102 tons, foundations have stood up without any noticeable giving.

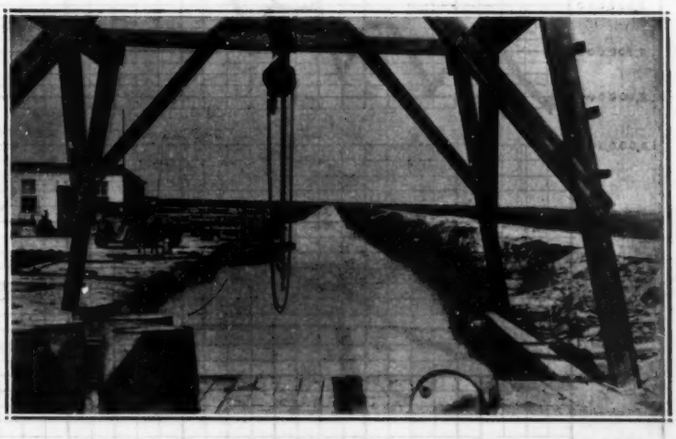
The foundations and substructure of the derrick are entirely of steel and reinforced concrete resting on piling. A total of 84 piling of 30-foot lengths were driven full length for the derrick legs proper. These were capped with railroad steel rails, on which a solid reinforced concrete base was laid to the water level. On this base was erected the reinforced

(Continued on Page 108)

View of steel foundation and bracing to insure strength for Gulf Coast's largest set-up.



View of lower portion of Humble Oil & Refining Co.'s No. 1 McFaddin showing how derrick and rig are built up above surrounding marshes and how equipment and crew are protected from weather.



Lower end of canal, located just off the beach of the Gulf of Mexico, the only means of access to Humble Oil & Refining Co.'s Jefferson County wildcat. The canal leads into a large lake, and thence to another canal to the rig, 6 miles inland in the Coastal marshes.

Industry Sick But Refuses Medicine

Doctor Wilbur, in Interview for The Oil and Gas Journal, Says Interstate Compact Should Have Been Taken Two Years Ago

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 24.—"The oil industry may be likened to a sick man, bewailing his illness and calling for someone to save him, but refusing to take medicine, because he does not like its taste or fears, while effecting a cure of his present ailment, it may leave him in a worse condition," said Dr. Ray Lyman Wilbur, Secretary of the Interior and chairman of the Federal Oil Conservation Board, when seen by the writer and requested to give his views of present conditions in the oil industry. "It should be borne in mind that wise treatment promptly administered often avoids a serious surgical operation," he added.

"At the meeting held by the oil industry at Colorado Springs, two years ago, there was outlined a plan for the enactment of interstate compacts by the oil producing states, to be approved by Congress, under which plan there might be control of waste, drilling and proration of the output of oil to meet consumption needs. Of course, this plan involved the meetings of representatives of the several states entering into these compacts and representatives of the Federal Government, because a body of that kind would of necessity have to determine the questions relating to proration and consumption demands.

Limitation of Imports

"Statistics of petroleum and products, for a long period of time, show that our overproduction has come from domestic activities, importations having remained almost uniform from year to year. Such increases as have occurred in the importation of oil have not been sufficient to affect profoundly the industry. The unprecedented and successful activity in drilling and production in our domestic fields during the last few years has made the difficulty. However, in order to show good will, the large importing companies have individually agreed to harmonize future imports with general proration plans to be applied to the domestic industry as a whole. This seems to provide a method of stabilization well worthy of careful trial.

"It is interesting to note that after two years of fruitless agitation the Oil States Advisory Committee, of which Cicero I. Murray is chairman, after very full discussion and conferences with many leaders in the oil industry has approved of this general plan of interstate compacts.

"If drilling and production can be controlled to provide only sufficient oil for domestic use, equilibrium in the industry will be brought about and, as a matter of course, prices will regulate themselves at a level reasonable to both producer and consumer. The representatives of the several states and of the Federal Government have fact finding facilities in respect to production and consumption. At present the voluntary committee has before it all statistical information gathered by the government, by the American Petroleum Institute, The Oil and Gas Journal, and other private sources of information, and past service indicates that it can be relied upon for the time being to give whatever service is necessary in the matter of such information.

Colorado Springs Conference

"The industry was not ready for the Colorado Springs conference so that in spite of the efforts put forth, misunderstandings crept in, befogging the issues.

"Criticism of the oil industry has been widespread, founded upon the idea that the industry is undertaking to restrict production and importation for the purpose of extorting undue profit from the public, regardless of any question of legality. The compact idea has been likewise objected to. The fact is, this plan has at all times been faced with the necessity of being submitted to Congress for approval.

"Such proration as has taken place up to this time has been conducted in separate pools within the oil producing states, under authority of state laws executed by state officials, and without any concerted action between the states be-

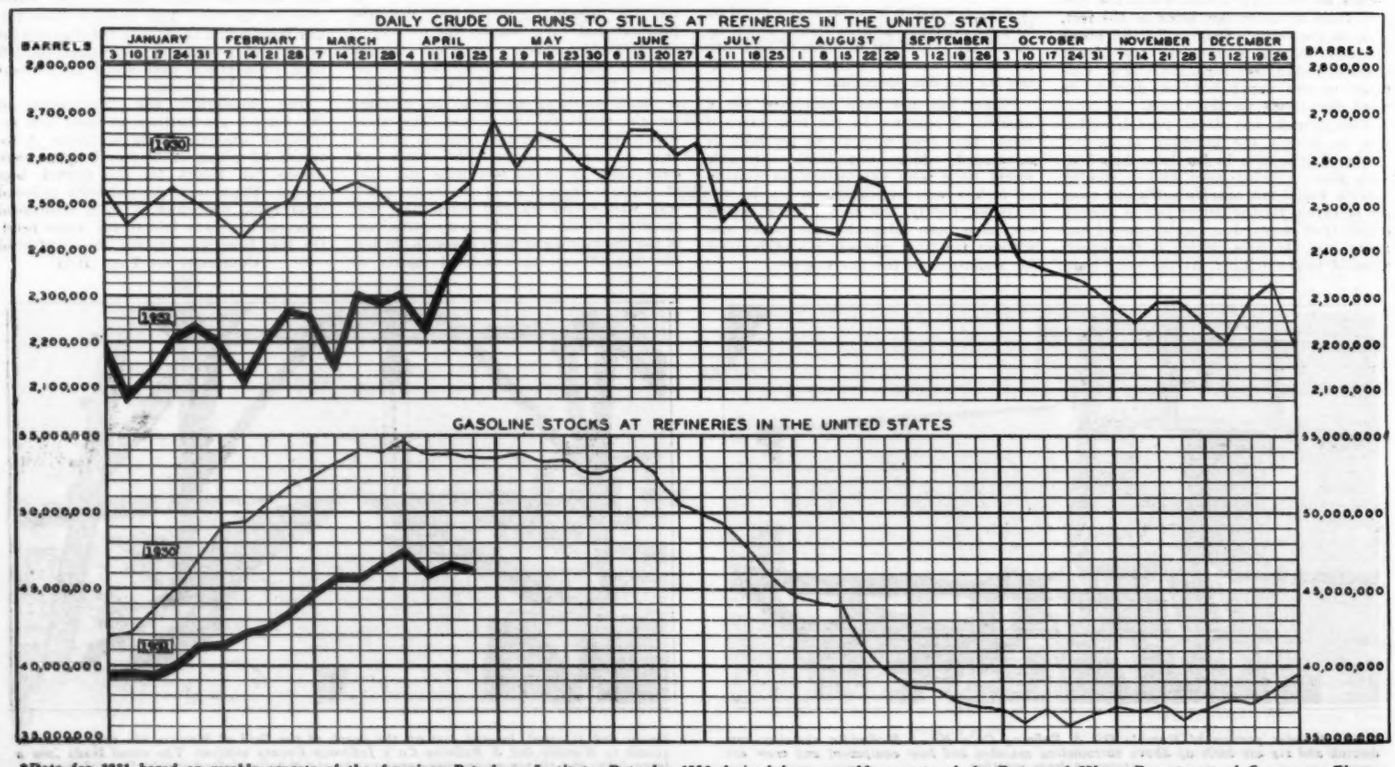
(Continued on Page 106)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending April 25:

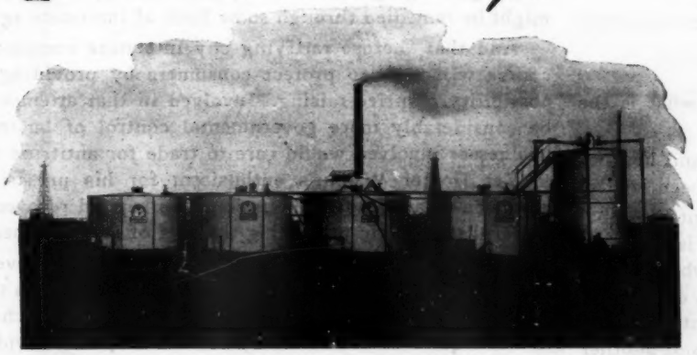
	Week ended April 25, 1931				Week Ending April 18				Week ending April 26, 1930			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	483,200	8,907,000	7,730,000	100.0	454,900	8,793,000	7,733,000	100.0	517,452	9,243,000	6,679,000
Appalachian	93.8	88,600	1,824,000	1,227,000	93.8	82,100	1,861,000	1,216,000	91.0	91,714	1,893,000	762,000
Indiana, Illinois, Kentucky	97.5	328,200	6,126,000	3,505,000	97.5	326,900	6,128,000	3,310,000	99.5	332,985	8,719,000	3,626,000
Oklahoma, Kansas, Missouri	89.4	277,100	2,667,000	3,938,000	89.4	276,900	3,601,000	3,823,000	89.1	319,857	4,366,000	4,123,000
Texas	91.9	560,400	7,953,000	6,002,000	91.9	614,700	7,933,000	5,839,000	90.8	604,243	7,694,000	9,624,000
Louisiana and Arkansas	98.3	167,300	2,372,000	2,327,000	98.3	140,100	2,118,000	2,332,000	96.8	176,059	2,620,000	1,942,000
Rocky Mountain	93.1	51,000	1,874,000	812,000	93.1	58,400	1,986,000	810,000	93.6	60,729	2,814,000	1,097,000
California	98.8	477,100	13,329,000	98,860,000	98.8	471,000	13,964,000	98,772,000	99.3	596,485	15,863,000	108,162,000
Total United States	95.7	2,432,900	46,451,000	127,401,000	95.7	2,434,100	46,384,000	126,835,000	95.6	2,699,614	53,212,000	136,015,000
Texas Gulf Coast	100.0	419,300	6,820,000	6,546,000	100.0	474,000	6,824,000	6,482,000	100.0	456,600	6,640,000	6,984,000
Louisiana Gulf Coast	100.0	111,900	2,108,000	1,309,000	100.0	88,100	1,949,000	1,304,000	100.0	108,571	2,253,000	1,065,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1931 based on weekly reports of the American Petroleum Institute. Data for 1930 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

SAFE ALL-WAYS



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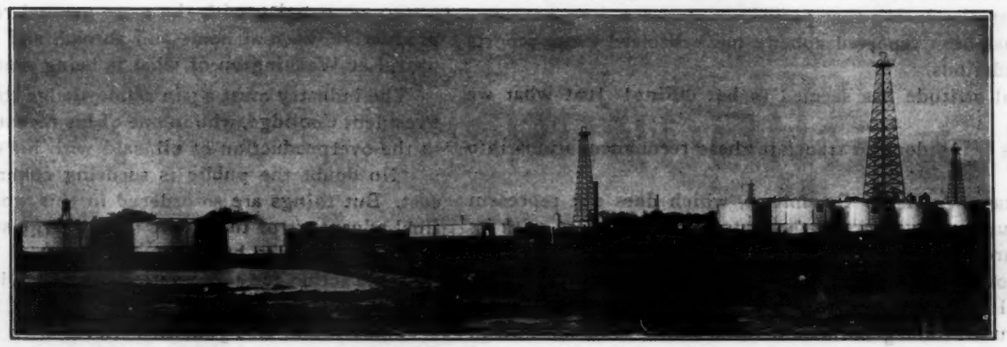

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Standard Method for Knock Testing

Development of Apparatus Traced Since Detonation in Motor Fuels First Recognized. Laboratory Perfects Procedure

By William H. Hubner* and George B. Murphy†

STANDARDIZED KNOCK TEST

In the following outline of the development which has taken place in the standardization of knock-testing apparatus and methods the authors include a detailed description of the method found to give concordant results on many fuels tested by the Universal Oil Products Co. The accompanying graphs also show the relationship existing among the commonly used terms "benzol value," "octane number" and "Ethyl equivalent," when designating the antiknock value of motor fuels.

The development of knock testing has progressed steadily since the discovery of detonation by C. F. Kettering, and its subsequent pioneer study by Thomas Midgley, Jr., and T. A. Boyd.

The original testing apparatus consisted of a slightly modified "Delco-light," single-cylinder, air-cooled engine, directly coupled to a direct current generator. The speed of the engine and also the load on the engine were controlled by hand regulation with a variable resistance in the direct current circuit. Detonation intensity was measured by the "Midgley Bouncing Pin Indicator" in conjunction with an electrolytic cell; the amount of hydrogen generated in the electrolytic cell was taken as an indication of the antiknock value of the fuel being tested.

During the years that followed, the

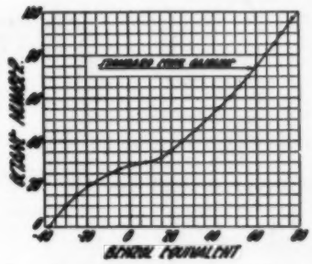


Figure 2—Relationship between octane number and benzol equivalent.

Delco-light engine was modified in many ways by laboratories[1] entering the field of knock testing. Naturally, this resulted in a number of different methods for measuring detonation and rating fuels, thereby making direct comparison between laboratories practically impossible. Recently, however, great strides have been made toward standardized knock testing.

The Ethyl Gasoline Corp., after 10 years of testing and rating fuels, has developed a standard "Series 30" Ethyl knock-testing apparatus, which is being used at the present time as standard not only by Ethyl licensees but also by a number of other laboratories; to date, over 110 of these have been distributed to laboratories throughout the world. The apparatus was developed primarily for testing Ethyl gasolines; standard operating conditions and a standard method of procedure for determining the amount of tetraethyl lead necessary to be added to a gasoline to make it equal in antiknock value to standard Ethyl Gasoline, have been adopted for this purpose. Nevertheless, it has been found extremely satisfactory for rating fuels in terms of other standards and under different operating conditions.

The Waukesha Motor Co., in conjunction with a detonation subcommittee, composed of members of the Society of Automotive Engineers, the American Petroleum Institute, the National Automobile Chamber of Commerce, and the United States Bureau of Standards, has developed a standard variable compression ratio engine for knock testing. Necessary accessories such as power absorption media, carburetion and instrumentation, and also a method of procedure for rating fuels have not yet been definitely adopted as standard by this subcommittee, but it is believed and hoped that they will be in the near future; when this is accomplished it will mark another definite and important step toward standardized knock testing.

The detonation subcommittee has, however, adopted a standard unit for expressing the antiknock value of a fuel, namely, "Octane Number," defined as "the percentage by volume of iso-octane in a mixture of iso-octane and normal heptane required to match the antiknock value of a given fuel." Iso-octane and normal heptane were first proposed in 1926 as standard reference fuels by Dr. Graham Edgar.[2]

The universal adoption of this standard by automotive and fuel technologists in this country and in Europe is one of the outstanding developments in knock testing; it is a big step toward simplifying interpretation of the results of knock-testing laboratories, thereby eliminating, to a large degree, possible confusion and misunderstanding among laymen as to the true antiknock value of a given fuel.

As a distinct step toward standardized knock testing, this laboratory has adopted a "Series 30" Ethyl knock-testing apparatus, with certain modifications, shown in Figure 1 as standard equipment. A standard method of procedure for testing and rating motor fuels has been developed by this laboratory and has been used quite satisfactorily during the last five months for determining the antiknock value of more than 2,000 fuel samples rating from 0 to 97 octane number.

Description of Apparatus

The complete testing apparatus incorporates all the characteristics which years of experience in testing and rating fuels have proven desirable in a routine knock-testing apparatus: It is simple in design and its cost is comparatively low ($1,480 complete, f.o.b. Detroit); it is dependable, thereby making reproducible ratings possible within the limits of experimental error over a long period of time; all its parts are ruggedly constructed and easily accessible; the fuel consumption is sufficiently low to permit the accurate rating of a small fuel sample; the instrumentation is designed to give rapid and accurate results; the synchronous generator used for power absorption affords a means of controlling engine speed and holding it constant during tests without the aid of hand regulation; it is suitable for testing both automotive and aviation fuels under the wide variation of cylinder temperature and pressure encountered in the use of these fuels.

The standard "Series 30" Ethyl knock-testing apparatus has been fully described by the Ethyl Gasoline Corp. in published articles[3] and descriptive pamphlets. The description which follows covers only its main features and the modifications made by this laboratory.

The locations of the panel board, fuel cups, float bowls, fuel drains, and knock-meter rheostat have been changed to permit greater accessibility of these parts and to increase speed in making knock-rating determinations. The knock rating of a fuel sample as small as 100 cc.'s can be accurately determined with the rearranged fuel cup and float bowl assembly. Practically a constant inlet air temperature (110° to 115° F.) is obtained, and the complete elimination of the undesirable air-suction noise is secured by the use of a specially designed warm-air manifold, which utilizes the heat of the boiling water in the cooling system as a heating medium. A micrometer screw arrangement has been built onto the breaker mechanism of the ignition system so that the spark can be more easily advanced or retarded than was possible with the standard spark adjusting set screw.

The engine and accessories, together with the power absorption synchronous generator are mounted on a heavy cast-iron base so as to insure proper alignment of these parts.

The engine is of the single-cylinder, fixed-compression ratio (7.75 to 1), overhead-valve, evaporative-cooled type, and is built specially for knock testing; the bore is 2½ inches, the stroke is 4⅝ inches, and the piston displacement is 22.71 cubic inches.

Engine power is absorbed by a special 220-volt, 3-phase, 60-cycle alternating current synchronous generator which is used first to crank the engine and then to absorb the power of the engine, thereby providing a uniform speed of 600 r.p.m. A special 70-volt direct current winding in the synchronous generator supplies direct current for the ignition system and also for the operation of the knock-measuring instruments.

The carburetor is of the single jet, single choke, horizontal type. A throttle valve is provided in the carburetor for varying the compression pressure of the engine by limiting the amount of charge taken into the cylinder during the suction stroke; compression pressures from 100 to over 200 pounds per square inch gauge can be obtained by throttling.

Figure 1—Modified "Series 30" Ethyl knock-testing apparatus.

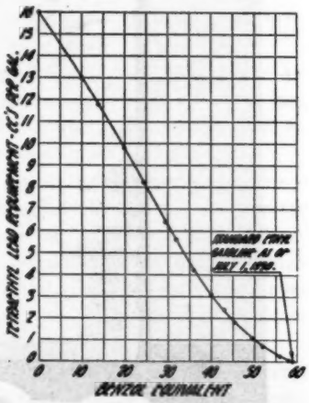


Figure 3—Relationship between benzol equivalent and tetraethyl lead requirement.

A three-way cock which is mounted on the carburetor permits fuel to be fed through either one of two float bowls. Vent wells on each side of this cock allow the vapor to be separated from the fuel before it enters the carburetor jet, thereby insuring a comparatively even flow of fuel to the jet. The hydrostatic head of fuel on the jet may be varied by moving the proper float bowl in a vertical direction by means of a screw mechanism.

Each float bowl and its corresponding vent well is connected to drain cock by means of three-sixteenths-inch outside diameter copper tubing and special resisting rubber tubing.

The two brass fuel cups are mounted directly on the float bowl covers; they are 2⅛ inches inside diameter and spe-

(Continued on Page 107)

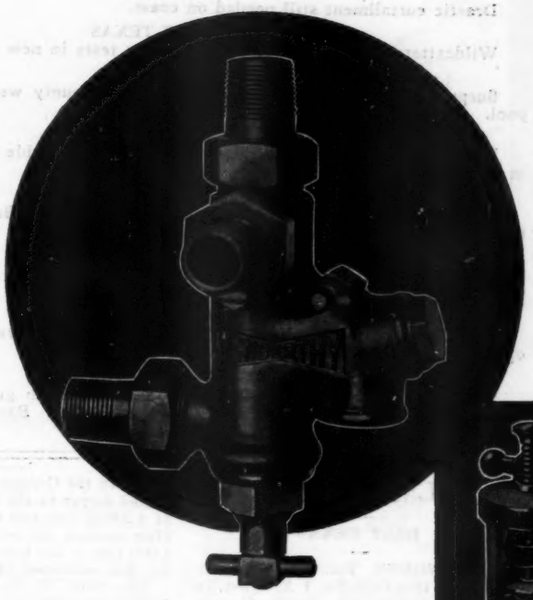
*Automotive engineer, Universal Oil Products Co., Chicago, Ill.

†Manager of the research and development laboratories, Universal Oil Products Co., Chicago, Ill.

[1] See S.A.E. Journal, February, 1927, p. 214. See S.A.E. Journal, March, 1927, p. 405.

[2] See S.A.E. Journal, February, 1927, p. 245.

[3] The Oil and Gas Journal, Mar. 6, 1930, p. 190.



ECONOMY SUGGESTS

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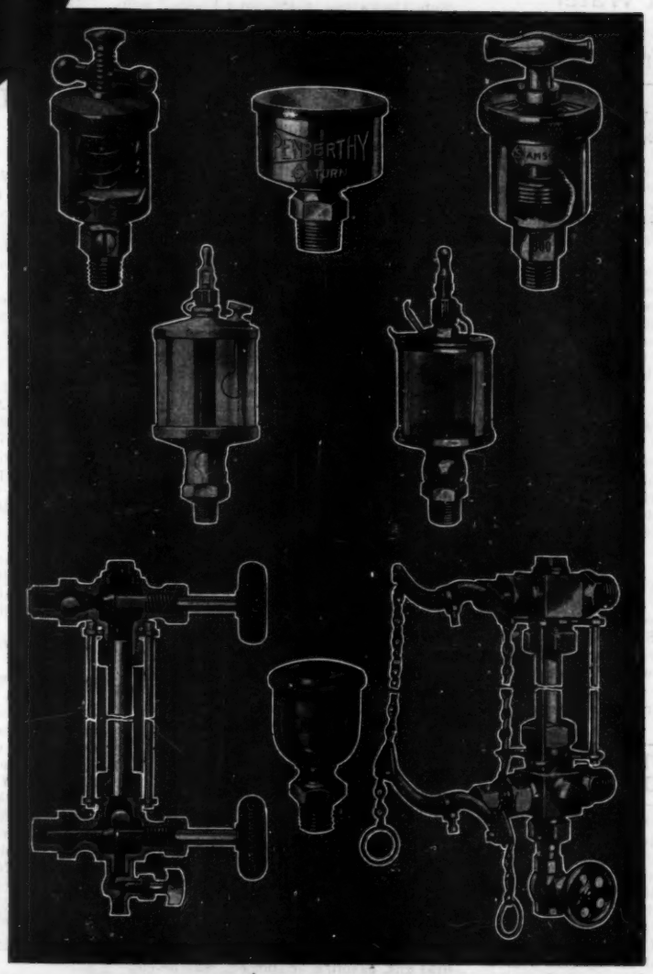

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DETROIT

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COMMISSION WANTS GULF COAST, TEXAS, OUTPUT CUT TO 140,000 BBLS.

By Nell Williams

HOUSTON, Tex., Apr. 28.—The possibility that the Gulf Coast of Texas might be placed under an enforced proration order along with other districts of the State was indicated in a call issued Tuesday by the State Railroad Commission for a meeting of all coastal operators to be held Saturday morning, May 2, in the Rice Hotel, Houston.

The Commission's call, signed by R. D. Parker, chief supervisor, stated it was to be the purpose of the meeting to organize an advisory committee for the Gulf Coast district as defined in proration orders entered for state-wide application on April 4, 1931, and to consider the best method of carrying out the Commission's order limiting the total production of the Texas Coastal fields to 140,000 bbls. daily.

Due to peculiarities of the Coastal fields this district has been exempted from proration as carried out in other districts and the curtailing of production to the allowable as set by the Commission has been left to the operators in the individual fields.

In the past the operators have been successful in reducing their output to the allowable by limiting drilling to offset and other obligated wells and by choking new wells to a maximum of 500 bbls. daily, without restricting production of leases ratably according to potential.

Despite efforts of coastal operators to co-operate in this plan, daily production has been increasing rapidly for the past month and now is more than 23,000 bbls. greater than the district's allowance with further increases in sight unless some additional curtailment program is worked out.

High Spots in Field News

KANSAS

McPherson County pools extended.

CALIFORNIA

Drastic curtailment still needed on coast.

SOUTHWEST TEXAS

Wildcatters active, bulk of drilling being tests in new areas.

WEST TEXAS

Surprise producer in Jones County. Foard County well may open new pool.

GULF COAST

Production shows gain. Wildcat southwest of Humble fails. Deep tests in three areas.

NORTH LOUISIANA-ARKANSAS

Wildcatters active in Bossier Parish. New test in Beauregard Parish. Good Mississippi gas well.

OKLAHOMA

Allowable from Class "A" wells increased 13,000 bbls. Capital Field extended. Strippers produce more.

EAST TEXAS

East Texas output reaches 300,000 bbls. Rusk-Gregg area making most of open period before May 1. Many new big wells.

ROCKY MOUNTAIN AREA

Drilling to be resumed at Greasewood Dome. High gravity showing in Larimer County, Colorado. Good shows in Badger Basin wildcat. New Montana test.

Serious Salt Water Intrusion in Kilgore Field in East Texas

FORT WORTH, Tex., Apr. 28.—East Texas Refining Co.'s No. 1 Wills, William Chisum Survey, topped the sand at 3,690 feet and was completed at a total depth of 3,695 feet making 550 bbls. first hour through casing and tubing. Casing pressure 220 pounds and tubing pressure 170 pounds. The well made 10 per cent b.s. and salt water. It is the fourth well in the Kilgore Field to make water.

Turman Oil Co.'s No. 1-A Brightwell in the Sevier Survey, Kilgore Pool, was the third well to make water, total depth 3,733 feet. It made 900 bbls. the first hour through casing and tubing and is now on twenty-five-sixty-fourths-inch choke, making 100 bbls. per hour, 40 per cent b.s. and salt water. It has 250 pounds tubing pressure.

The Humble Oil & Refining Co., Houston Oil Co., Gulf Production Co. and Magnolia Petroleum Co. entered into an agreement this noon to choke in all of their producing wells to hold back salt water encroachment and are endeavoring to obtain agreements from other producers in the Kilgore Pool, Rusk County, to do the same to prevent flooding the pool. This encroachment will no doubt have much weight on furthering efforts to prorate the three producing areas in Gregg, Rusk and Smith Counties. Wells now making water in this pool are on the west and northwest side but are near enough to other producers to spread great alarm and threaten all wells in the pool.

GOVERNOR STERLING MAY ADDRESS PRODUCTION MEN

Governor R. S. Sterling, of Texas, is expected to be a speaker at the midyear meeting of the American Petroleum Institute's Division of Production in the Baker Hotel at Dallas, Tex., June 2 to 4.

The session will open June 2 with meetings of the various committees of the division. The Central Committee on Standardization and the Special Committee of the divisional General Committee will hold a joint meeting to approve standardization reports.

The program for Wednesday, June 3, calls for a morning session, starting at 9:30, on production practice. W. C. Shutts and M. Bowman Thomas, Humble Oil & Refining Co., will present a paper, "Efficient Operation of Pumping Rigs."

H. N. Marsh, B. H. Robinson and D. H. Kingman, all of the General Petroleum Corp. of California, will discuss "High Volumetric Efficiency in Oil Well Pumping and Its Practical Results." Tentatively on the program is a paper, "Power Transmission Efficiency of Pumping Wells," by C. L. Shirley and J. T. Hayward, of the Shell Petroleum Corp.

"A Method for Determining Production Allowances in Prorated Fields," will be explained by H. D. Wilde, Jr., and T. V. Moore, of the Humble Oil & Refining Co. The June 3 afternoon meeting will open at 2:30. R. R. Penn, Penn Oil Co., Institute vice president and chairman of the Division of Production, will deliver an address. Warner Clark, of the Standard Oil Co. of California, will speak on "Proration," and R. E. Hardwicke, an attorney, will discuss the "Legal Aspects of Gas Conservation in the Production of Oil."

The evening session, starting at 8 p.m. will be an open meeting of the central committee on drilling and production practice.

The first paper for the morning session, Thursday, June 4, will be the "Report of the American Petroleum Institute Research Associate on Corrosion at the Bureau of Standards," presented by Gordon N. Scott, the associate. R. S. Cole, Gypsy Oil Co., will speak on "Legal Phases of Oil Field Pollution." George F. Prussing, Union Oil Co. of California, chairman of the Division of Production committee on accident prevention, will discuss "Economic Aspects of Accident Prevention."

The afternoon session, opening at 1:30 p.m., will be given to drilling practices. E. P. Tallant, Union Oil Co. of California, will present a paper prepared with the co-operation of the California district drilling practice committee on "Development, Reclamation and Disposal of Rotary Mud in California."

Characteristics of Gulf Coast formations, the problems involved, and their causes, as well as remedial and preventive treatment, will be considered by C. P. Parsons, Halliburton Oil Well Cementing Co.; W. T. Doherty, Humble Oil & Refining Co., and Stanley Gill, Gulf Production Co., in a paper entitled "Drilling Fluid Problems and Treatment in the Gulf Coast."

H. M. Harris and J. E. Eckel, Humble Oil & Refining Co., in a paper, "Oil Field Boiler Tests," will cover results of actual tests.

The operation, maintenance and economy of internal combustion engines for rotary drilling, whether operated on natural gas, gasoline or fuel oil, will be considered by David L. Trax, Gypsy Oil Co., and R. R. Hawkins, The Texas Company, in a paper, "Internal Combustion Engines for Rotary Drilling."

Blaine B. Westcott of the Gulf Cos. will present a paper, "Hard Surfaced Rotary Bits."

On June 5, following the close of the mid-year meeting, the institute's board of directors will convene at 10:30 a.m. in the Texas Hotel at Fort Worth, Tex.

NITROGLYCERIN STOLEN

OKMULGEE, Okla., Apr. 27.—The theft of 320 quarts of nitroglycerin from the magazine of the Independent Eastern Torpedo Co., 5 miles north of here, was reported to police by Carl Steffy, employe of the company.

Late Fields

EAST TEXAS

FORT WORTH, Tex., Apr. 28.—Sinclair Oil & Gas Co.'s No. 1 A. Wiley, in the J. Jordan Survey, Smith County, East Texas, found sand at 3,855-65 feet, and was flowing 150 bbls. of fluid an hour, 70 per cent of which was water. The well is located approximately 1 mile northwest of the G. V. Lewis' No. 1 Cooke, in the same county.

OKLAHOMA

The Oklahoma Corporation Commission announced April 27 that it had authorized an increase in the allowable output from the West Chandler Field in Lincoln County. The new order allowed the wells to be produced 8 per cent of potential, which was 22,450 bbls. the first of April. It is believed the new order increased the flow of oil about 1,000 bbls. a day from the area.

Droppleman Drilling Co.'s No. 1 Jones, SE cor. NW, Section 21-8-3, a wildcat in Pottawatomie County, southwest of the production in the Greater Seminole area, found a showing of black oil in the Hunton lime at 4,650-95 feet. The test was coring from 4,695-4,715 feet with nothing showing.

Champlin Refining Co. and Hall & Briscoe's No. 1 in the SW cor. SE. Section 3-11-3w, on the west side of the Oklahoma City Field, was completed early in the week for an estimated 45,000 bbls. of oil a day, but was shut in without making a production test when a leak developed in the lower master gate. The well was killed by forcing mud into the hole to change the gates. The sand was found from 6,300-6,460 feet.

Indian Territory Illuminating Oil Co.'s No. 1 Bowlegs, NW cor. SE Section 26-9-6, which was one of the first wells drilled in the Greater Seminole area, was drilled deeper to the second Wilcox sand at 4,209-22 feet and shot with 10 quarts, after showing oil and gas. The oil rose 1,000 feet in the hole over night and the gas was estimated at 100,000 feet.

Tom Slick Oil Co. and others' No. 1 Fulkerson, NW cor. NE NW Section 15-20-4w, southeastern Garfield County, found a showing of oil and water in the second Wilcox sand at 6,151-55 feet. The well made 3½ bailers of oil and 3½ bailers of water an hour.

Phillips Petroleum Co.'s No. 1 in SW cor. NW SE NE Section 10-11-3w, on the west side of the Oklahoma City Field, flowed 6,006 bbls. of oil the first hour and 35 minutes. The oil was found in the Wilcox sand at 6,312-6,411 feet.

J. W. Gwin and others' No. 1 Earlsboro, NE cor. SE NW Section 33-9-6, a wildcat west of production in the old Seminole Pool, was drilling in the dolomite at 4,231 feet. The top of the dolomite was found at 4,222 feet.

Tom Slick Oil Co. and Stanolind Oil & Gas Co.'s No. 2 Kentzelman, SE cor. SW Section 7-14-4, flowed 600 bbls. of oil the first 12 hours from the Wilcox sand at 4,975-5,004 feet.

KANSAS

The wildcat test of Fisher & Lauck, No. 1 Souders, in Section 1-28-1, south of the Wichita, Kans., municipal airport, and southwest of the Eastborough Pool, in the same county, has resumed drilling at 1,300 feet.

Derby Oil Co.'s No. 1 Rimel, NW cor. NE NE, Section 30-27-2, in the Eastborough Pool, Sedgwick County, is fishing for two strings of tools. The well was a producer in the Simpson sand and the owners are attempting to test the Silicious lime.

Six first reports of oil and gas activ-

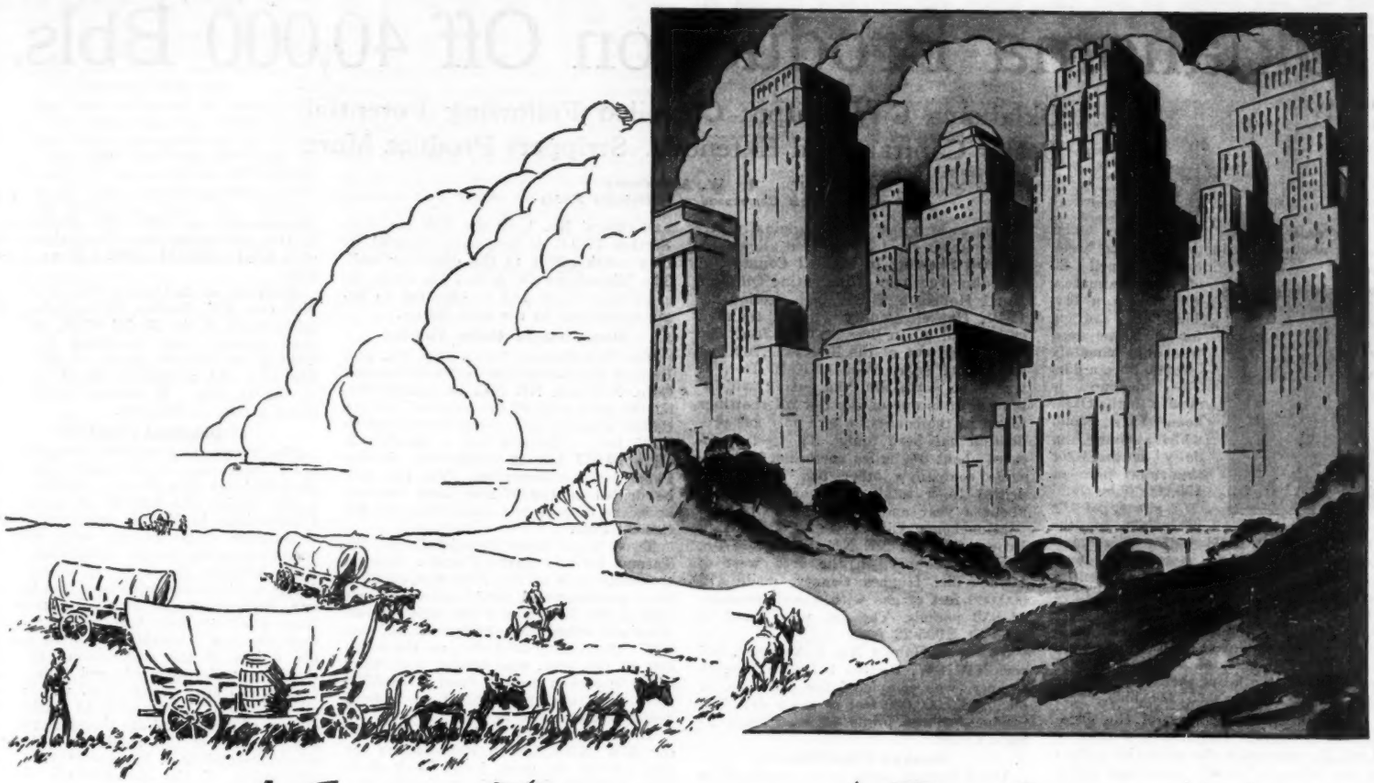
(Continued on Page 112)

SCORE SHEET ON OIL PRODUCTION

Below is shown the allotted average daily production in the United States from April 1 to October 1, 1931, suggested by the Oil States Advisory Committee, and the actual daily average production in the week ending April 25:

	Barrels			
	Allotted	Actual	Over	Under
Oklahoma	550,000	544,840	.....	5,160
Texas	714,000	941,420	227,420	.....
California	500,000	526,250	26,250	.....
Kansas	110,000	109,350	.....	650
Arkansas	50,000	46,790	.....	3,210
Louisiana	65,000	66,462	1,462	.....
New Mexico	40,000	38,722	.....	1,278
Rocky Mountain area	60,000	56,005	.....	3,995
Eastern states	110,000	112,000	2,000	.....
Total	2,199,000	2,441,839	257,132	14,293

Net average daily overproduction, 242,839 bbls.



Keen, Daring Minds Build for Progress

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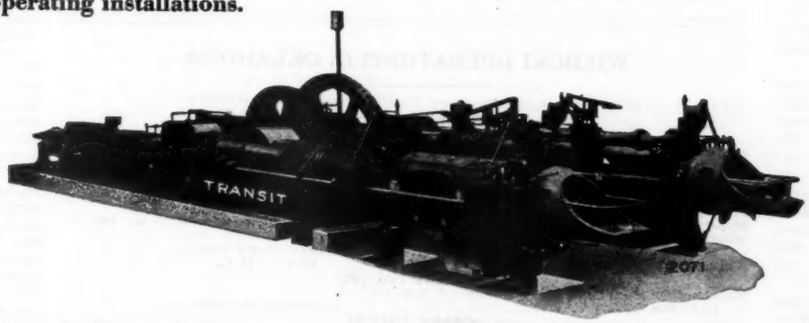
Formerly refinery gas was burned most wastefully, but TRANSIT engineers, by utilizing it in the most profitable way, have made possible another long step forward in refining economy.

We will be glad to give you detailed information and refer you to actual operating installations.



BEAUMONT, TEXAS
E. L. Wilson Hardware Company
LOS ANGELES
Republic Supply Company of California
TULSA and MID-CONTINENT FIELD
Frick-Reid Supply Corporation

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

PHOENIX, ARIZ.
Pratt-Gilbert Co.
NEW ORLEANS, LA.
Woodward, Wight & Co.
SALT LAKE CITY, UTAH
F. C. Richmond Machinery Co.
ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

NEW YORK PHILADELPHIA CLEVELAND PITTSBURGH LOS ANGELES HOUSTON TULSA

Builders for Progress in the Oil Industry

Oklahoma Production Off 40,000 Bbls.

Oklahoma City Output Curtailed Following Potential Tests. Capital Field Extended. Strippers Produce More

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The daily average production of Oklahoma shows a reduction for the week ending April 25 of approximately 40,000 bbls. a day. The daily average for the seven days was approximately 544,900 bbls. a day. The decline is mostly in the Oklahoma City Field, which shows a daily average for the same time of 152,000 bbls.

A survey of the potentials of the Oklahoma City Field indicates a small decrease compared to those taken three months ago on January 1. The potential of 511 wells in the field was 5,784,862 bbls. for the second quarter, compared to 5,998,516 bbls. for the first quarter in January. The potential from 26 new wells totals 772,736 bbls. of oil, bringing the total daily potential of the 537 producing wells in the field to 6,557,598 bbls.

With the announcement of the Oklahoma Corporation Commission's order of April 21, increasing the allowable output of the "Class A" wells, sometimes called "stripper wells," to 20 bbls. a day from 10 bbls. and production in excess of 20 bbls. a day be prorated to 50 per cent and changing the classification of the wells in the Konowa and East Earlsboro extension pools, comes the announcement from the state umpire that new potentials will be taken in those fields.

Potentials of May for leases in the Allen (shallow and Wilcox), Bowlegs, Carr City (settled production), East Earlsboro, Earlsboro, Earlsboro Townsite, Little River, East Little River, Maud, Mission, Sasakwa, Searight, Seminole, East Seminole and St. Louis Pools will be determined by deducting 3 per cent from the April potentials.

All wells producing from the Wilcox-Simpson formation in the West Chandler Pool will be open to full production for one day from 7 a.m. May 1 to 7 a.m. May 2.

The Class "A" wells in the South Earlsboro Pool will be allowed to flow to full capacity May 1, and Class "B" wells on May 2. The total production from the "A" and "B" wells on these dates will be the potentials for the month.

All leases in the Wewoka townsite will take a three-hour open flow gauge 7 a.m. to 10 a.m. May 1, and eight times the amount of oil produced during this period will be considered the daily potential production.

All leases in the Wanette-West Asher Pool will take a six-hour open flow gauge 7 a.m. to 1 p.m. May 1, and four times the amount of oil produced during the period will be considered the daily potential production.

The Konawa and West Seminole Pools and the flush wells in the Carr City Pool will be open to full production for one day from 7 a.m. May 1 to 7 a.m. May 2.

Konawa's Potential

The testimony offered at the commissions hearing showed the Konawa Pool had a potential of 100,380 bbls. of oil a day on July 1, 1930, and the wells had declined to 34,096 bbls. on April 1, 1931. Under the previous orders the pool was permitted to flow 18⅜ per cent of the production on all wells averaging better than 400 bbls. a day. The commission's order re-classified the pool and now permits the wells to produce 25 per cent of all wells averaging betted than 300 bbls. a day. The new percentage will not permit as great a run as was originally permitted under the 18⅜ per cent allowance.

Oil Showing in Haskell County

Indian Territory Illuminating Oil Co.'s No. 1 Holleman, C SW NE, Section 23-11-21, Haskell County wildcat, found a showing of oil in lime at 1,762 feet. The test drilled out of the lime at 1,767 feet and found sand from 1,810-15 feet. It was shut down and the casing will be landed. It is one of the few oil showings found in the county, where only gas production has been found. The test is located about 3½ miles northeast from the same company's other test which was drilled to a total depth of 4,000 feet about a year ago and found to be dry.

Minnehoma Oil & Gas Co.'s No. 2 Brown, SE cor. NE NE, Section 17-7-8, Seminole County, in the area west of Holdenville, Hughes County, made 41,000,000 feet of gas with a rock pressure of 950 pounds. The gas was found in sand at 2,905-22 feet.

Jarvis & Holm's No. 1 Narcome, SE cor. NW SW, Section 9-7-8, in Hughes County, was completed for 485 bbls. of oil and 25,000,000 feet of gas a day. The production was found in sand from 2,940-78 feet.

Sasakwa Completions

The following wells were completed in the Sasakwa Pool, Magnolia Petroleum Co.'s No. 2 Reed, NE cor. NW NE, Section 26-5-7, made 30,000,000 feet of gas with a rock pressure of 500 pounds from sand at 2,580-2,650 feet. Sinclair Oil & Gas Co.'s No. 2 Jefferson, in Section 23-5-7, was plugged back from a total depth of approximately 4,000 feet to 2,730 feet. The casing was ripped from 2,562-78 feet and the well made 40 bbls. of oil and 7,000,000 feet of gas a day.

Another test was announced during the week in the extension area between the East Earlsboro and Searight Pools in the Greater Seminole area. The Prairie Oil & Gas Co. has made a location for No. 1 Sager, SE cor. SW, Section 8-9-6. It is a direct west offset to the recently completed well of Lippa and others, No. 1 Phillips, in the SW cor. SE, Section 8-9-6, the discovery well. The Prairie Oil & Gas Co. together with others own the entire E half SW, Section 8 and the NE SW, Section 8. The R. H. Pierce Co. and others' No. 1, in the NW cor. NE, Section 17-9-6, is preparing to spud. It is a south offset to the discovery well. The Minnehoma Oil & Gas Co. owns the southwest offset and is expected to begin operations in the near future.

Deep Test in Caddo County

The Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp.'s No. 6 Preston-Culp, NW cor. NE NE, Section 6-5-9w, on the west edge of the Cement Pool, in Caddo County, has resumed drilling at 6,235 feet. The test had a showing of oil at 6,077 feet in sandy lime, in the Pennsylvanian formation. The test will be drilled to the Wilcox sand horizon. It is the deepest test ever drilled in the Cement Pool.

Two tests were completed in the Tatums Pool, in Carter County. One on the south side of the field was showing for a producer and the other on the east side of the field was a dry hole. Louis Sikes and others' No. 1 Hopson, NE cor. NW NE, Section 25-1s-3w, on the south side of the area, was testing a showing of oil in broken sand at from 2,134-2,526 feet. The test was drilled to a total depth of 2,620 feet in shale.

The Carter Oil Co.'s No. 1 Taylor, SW cor. NW NW, Section 19-1s-2w, on the east side of the area, found black shale from 2,023-93 feet without finding any oil and it was being abandoned as a dry hole at that depth.

Magnolia Petroleum Co.'s No. 1 Burton, NW cor. SE NW, Section 30-1s-2w, a quarter of a mile southeast of production in the area, was drilling the cement plugs to test a sand found at 1,500-1,600 feet. The test was drilled to a total depth of 4,115 feet and plugged back.

Lesh and McCall's No. 2 Carter. NE cor. SW SW, Section 14-1s-3w, on the northeast side of the Tatums Field, was drilling below 2,350 feet without logging any sands. It is now below the regular producing horizon in the field and indications are it will probably be a dry hole.

Dry Holes in Cotton County

Two Cotton County tests were abandoned during the week. Gilbert and Lowery's No. 1 Forney, C SE SE, Section 4-2s-11w, was dry at a total depth of 2,289 feet and will be abandoned. The other test was Colbert and Cole's No. 1 Thomas, SE cor. NW SW, Section 22-2s-11w, was being plugged and abandoned at a total depth of 2,200 feet as a dry hole.

McCrory & McCrory's No. 1 Little, NW cor. SW, Section 30-7s-6, about 12 miles south of the Madill Field, in Marshall County, was preparing to start drilling the cement plugs at 490 feet. The test had a showing of oil in sand at 490-94 feet. It extends production about a mile in the area.

In Oklahoma City Field

The recent Corporation Commission's order increasing the allowable flow of the Oklahoma City Field to 165,000 bbls. a day during the balance of April and 175,000 bbls. in May is confusing. The commission states in the order that a condition exists in the Oklahoma City Field whereby the wells of many producers are both underproduced and underrun, because of the lack of a market. Some producers have been unable to produce the full allowable permitted under the orders of the commission and are therefore underproduced, and some producers who have produced oil within the allowable have been unable to market or dispose of the oil and are therefore underrun. A part of this condition is due to misunderstanding in interpretation of the application of the commission's orders previously issued, which condition is now made clear and set at rest by the commission's journal entry No. 1,876 permitting all producers who had not run 6¼ per cent of their potential after February 10, 1931, to produce the amount of oil which they would have produced in the period from February 10 to March 1, had they produced the wells the full 6¼ per cent of the potential production during the period. Another contributing cause was the failure of some companies to take the full amount of their nominations of purchase, upon which the commission's orders have been based. In order to enforce ratable taking, it is necessary that proper provision be made to take care of the underproduced and underrun oil during a reasonable period of time. The total of this underrun and underproduced oil as of April 20, was 1,700,000 bbls. In addition, therefore, oil produced during the test period for the wells, permitted by the commission's order, will amount to more than 3,300 bbls. per day during the remainder of April and the month of May.

The rated potential of the Oklahoma City Field on April 20 was estimated at 2,240,000 bbls. a day by the Oklahoma Corporation Commission. The figure was arrived at by multiplying the four-hour actual production by two which is the same thing as multiplying the four-hour gauge by six and dividing by three as heretofore prescribed by the commission. The commission states in the order that the production of the wells during the four-hour open flow is ordinarily in excess of the flow over any considerable period of time, and finds that the method above stated produces a fair representation of actual daily potential production. Upon the same basis, the commission rates the daily average potential of the Oklahoma City Field for the month of May at approximately 2,549,489 bbls. of oil a day.

Allowed Production

The allowed production from the field for the balance of April is 7 per cent of the 2,240,000 bbls., or 156,800 bbls. a day from all wells that are not now illegally overproduced. The difference between 156,800 bbls. and the 165,000 bbls. will come from the underproduced wells. During the month of May the allowed production will be 7 per cent of the 2,549,489 bbls. of oil, or 152,969 bbls. The difference between the 175,000 bbls. a day and the 152,969 bbls. will come from the

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 13-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Show oil 5,418-30 ft.; fishing.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 24-8-26w	Fishing 2,190 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w	Shut down 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Drlg. 3,125 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Shut down 4,665 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	Shut down 1,115 ft.

COAL COUNTY

McGraw Oil Co.'s No. 1 Ward, NE SE Sec. 35-1-8	Drlg. 1,040 ft.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Shut down 760 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 9-3-10w	Shut down 2,282 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.
J. R. Travis' No. 1 Pickett, NE cor. Sec. 3-1-11w	Drlg. 800 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,350 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Shut down 100 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	Rig.
Skinner's No. 1 Elrod, SW cor. Sec. 13-2-3	Shut down 1,120 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW Sec. 23-7-21w	Drlg. 1,550 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w	T. D. 7,935 ft.; plugged back to 7,500 ft.; shot 30 qts. 7,270-7,300 ft.; plugged back to 5,568-82 ft.; shot 50 qts.; shut down.

(Continued on Page 116)

underproduced wells. The commission further states that if and when the underrun and underproduced condition shall be eliminated in the Oklahoma City Field the umpire shall immediately report the fact to the commission for its further action and allotment of such market.

Estimated Recovery

It has been estimated by some geologists that approximately 8,000 acres have been found productive in the Oklahoma City Field and that the total recovery will be approximately 300,000,000 bbls. of oil. The greater portion of the field is producing from the Detrital zone, which covers approximately 4,000 acres, including the School Land and Johnson sands. This zone has had approximately 18,000 bbls. recovery to date. The Wilcox sand area covers approximately 2,000 acres, which some predict will have an ultimate recovery of 60,000 bbls. per acre. The Arbuckle lime area covers approximately 1,900 acres and has yielded approximately 16,000 bbls. per acre so far and it is estimated the recovery may be 18,000 bbls. an acre.

Field Is Extended

During the week production in the Oklahoma City Field was extended by new producers on the north and west. Westgate Oil & Gas Co.'s No. 1 Carey, SE cor. NE SE Section 34-12-3w, on the north end of the field flowed 2,180 bbls. of oil the first hour and 6,398 bbls. of oil the first three hours. The oil was found in the Wilcox sand at 6,260-6,401 feet. The gas was estimated at 53,000,000 feet a day.

Shaffer & Riddle's No. 1 Giles, NE cor. SW Section 15-11-3w, on the west side of the field, extended the production two locations to the west, flowing 1,863 bbls. of oil the first hour and 7,184 bbls. of oil the first four hours. The oil was found in the Wilcox sand at 6,395-6,550 feet. The gas was estimated at 42,000,000 feet a day. Considerable new work is expected to be started around the west extension well, but the north end of the field is not likely to get a play at this time as the well is near the limits of the U-7 drilling zone and is too near the business district of the capital city.

Big Gas Potential

Old wells producing from the Silicious lime in the Oklahoma City Field were plugged back to the shallow gas horizons, indicating the field still has a large potential gas production which can be developed when a market is found. The gas production will not be developed at the present time but will be held in reserve. Indian Territory Illuminating Oil Co.'s No. 1 Emerson-Joyce, NE cor., Section 25-11-3w, a south offset to the discovery well in the Oklahoma City Field, was plugged back from a total depth of 6,664 feet to 4,010-20 feet and shot with 20 quarts, and was completed for 150,000,000 feet of gas. It is the shallowest producing well in the field at this time. The same company's No. 1 Thomas-Fuzzell, SW cor. SE SE, Section 13-11-3w, was also plugged back from a total depth of 6,542 feet, where it was originally completed for 44,000 bbls. of oil a day, to 6,040-65 feet, and shot with 40 quarts, being completed for 2,500,000 feet of gas a day. A number of other wells have also been plugged back to this horizon.

Geologists are of the opinion the gas horizon extends over the lime zone since the formation is uniform over the entire field. Considerable gas has been found while the wells were drilling but it has always been mudded off, since the deep oil sand was the objective.

The lack of a market for the gas is the reason for delaying the development of the gas horizons. At the present time only one pipe line is serving the field, Cities Service Gas Co. line extending to the north. When the demand for gas increases there is a possibility of developing the 4,000-foot, 5,000-foot and the 6,000-foot gas zones.

Oklahoma City Shipments

Pipe line runs and tank car shipments from the Oklahoma City Field for the week ending April 25 were 1,229,105 bbls. Production for the same week was 1,058,807 bbls., indicating that 170,298 bbls. of oil was taken from the under-run leases and field storage. The action of the pipe line companies indicates an increased demand for the crude oil from this district. The daily average production from the field was 151,258 bbls. a day, and the average pipe line shipments were 175,586 bbls. a day. The following companies handled oil from the Oklahoma City Field during the week: Champlin Refining Co., Empire Oil & Refining Co., Magnolia Petroleum Co., Oklahoma Pipe Line Co., Operators Oil Co., Prairie Pipe Line Co., Shell Petroleum Corp., Sinclair Oil & Gas Co., Stanolind Crude Oil Purchasing Co., Crude Oil Transportation Co., Tidal Oil Co., Anderson-Prichard Oil Corp., Century Oil Co., and Indian Territory Illuminating Oil Co.

Western Operations

Three pools in Kay County with 680 wells producing under proration averaged 7,700 bbls. of oil for the week ending April 15, an average of around 11 bbls. per well. The production by pools was as follows: Hubbard Pool, with 57 wells, made 915 bbls. of oil; Alcorn Pool, with 19 wells, averaged 611 bbls.; Three Sands Pool, with 604 wells, averaged 6,174 bbls.

Shell Petroleum Corp.'s No. 1 Dayhyle, SW cor. SE Section 18-22-5, Pawnee County, a wildcat, is being started about 3 miles north of Pawnee. It will be drilled to the Bartlesville sand but will also test all other sands. The nearest production is about 2½ miles to the south.

Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 1 Heitholt, in NW cor. SE SE Section 33-24-3w, a wildcat in Garfield County, was shut down waiting for cement at a total depth of 5,165 feet. The cement plugs will be drilled and the Simpson sand tested from 5,046-65 feet.

Tom Slick Oil Co. and Ramsey Petroleum Corp.'s No. 1 Fulkerson, NW cor. NE NW Section 15-20-4w, Garfield County, found the top of the Wilcox sand at 6,076 feet and was drilling in the sand at 6,095 feet with nothing showing.

Potentials Compared

The last of the potentials were completed during the week in the Oklahoma City Field and the Umpire Otto Bradford was working on the over and underruns to correspond to the new allowed production order issued by the Oklahoma Corporation Commission. Some of the recent potentials figured on the 24-hour basis, compared to the January potentials were as follows:

Company and well No.—	April potential	January potential
Donleon Oil Co.:		
No. 1 Hunsicker	54,335	47,064
I. T. I. O.:		
No. 4 C. Brokaw	12,813	11,025
No. 3 Canfield-Button	1,116	2,326
No. 1 Wilkie-Anderson	251	377
No. 1 Farley-Fuzzell	1,289	12,183
No. 4 H. W. Jones	2,800	2,100
No. 2 Lawrence Place	23,013	22,313
No. 4 Knox	9,195	10,759
No. 3 M-K-T	13,350	18,858
No. 1 Salsman	1,120	793
No. 2 Corff	3,080	3,127
No. 2 Wm. Canfield	4,385	3,319
No. 1 Pearl Trosper	565	1,021
No. 4 Sudik	163	235
No. 10 Trosper et al	7,632	6,162
No. 2 Werner-Speegle	1,179	1,351
No. 1 H. V. Foster	37	59
No. 7 Lillie Jones	1,194	1,037
No. 8 Lillie Jones	420	550
Wrightsmith Oil Co.:		
No. 2 Smith	6,016	5,670
Century Petroleum Corp.:		
No. 1 Barr	17,046	17,357
Skelly Oil Co.:		
No. 8 Hoopes	5,732	10,069
Champlin Refining Co.:		
No. 1 Seal	440	None
No. 2 Seal	818	None
Phillips Petroleum Co.:		
No. 1 Mosey	31,409	None
No. 1 Nunn	70,234	None
Oils, Inc.:		
No. 1 Thompson	56,601	None

Greater Seminole Production

The production from the Greater Seminole area for the week ending April 20, averaged 187,863 bbls. from 2,858 wells. The production increased about 4,000 bbls. from the previous week. The first 12 pools listed below comprise the Seminole area, which averaged 130,890 bbls. a day from 1,854 wells.

Pool—	Wells	Bbls.
Little River	369	23,679
East Little River	81	6,037
Carr City	84	12,985
Maud	131	2,516
Mission	90	9,080
Bowlegs	272	14,719
Earlsboro	282	19,514
S. Earlsboro	27	5,500
E. Earlsboro	154	17,267
Seminole	250	13,752
E. Seminole	34	1,867
Searight	80	3,974
Total	1,854	130,890
Allen	280	12,212
Asher	25	708
Wanette	60	6,906
Konawa	109	11,332
Sasakwa	47	2,546
St. Louis	483	23,216
Grand total	2,858	187,863

Bryan County

W. A. Johnson's No. 1 Ussery, SE cor., Section 14-6s-7, has been abandoned at 485 feet.

Carter County

Carter Oil Co. has the rig up for No. 2 Paul Robb, SW cor. NW, Section 19-1s-2w. Gilbert & Lowery's No. 1 Forney, C SE SE, Section 4-2s-11w, is dry and abandoned at 2,245 feet.

Cherokee County

Weaver & Proctor's No. 1 Benge, SW cor. NE NE NW, Section 8-14-21, is dry and abandoned at 980 feet.

Coal County

Mid-Western Oil & Gas Co. moved a machine in for No. 1 Gumm Brothers, C SW NW, Section 30-3-10.

Comanche County

Max Pray's No. 1 Kline, NE cor., Section 8-3-10w, has been abandoned at 2,282 feet.

Creek County

H. U. Bartlett and others' No. 1-A Coonrod, SW cor., Section 8-19-9, is spudding. Troutt and others' No. 2 Grayson, SW cor. NW NE, Section 1-19-10, is dry and abandoned at 2,006 feet. R. F. Moore and others' No. 1 Thompson, SE cor. NW, Section 17-17-8, has been completed for 2,750,000 feet of gas in sand 2,765-90 feet after plugging back from 3,643 feet in Wilcox sand. Emarthla Oil Co.'s No. 1 Hodge, SW cor. NW, Section 29-17-10, is dry and abandoned at 3,100 feet. J. M. Scott and others' No. 1-A Wacoche, SW cor. NE NE, Section 17-17-11, is a dry hole at 2,918 feet. Olean Petroleum Co.'s No. 3 Bigpond, SW cor. NE NE, Section 36-15-7, an old well deepened, has been completed for 145 bbls. in sands 3,772-77 feet and 3,789-3,802 feet. Atlantic Oil Producing Co.'s No. 1 Fuel, SW cor. NW, Section 26-14-10, made 235 bbls. in Misener sand 3,213-35 feet.

Hughes County

Blackwell Oil & Gas Co.'s No. 1 Holmes, SW cor. NE SW, Section 9-7-8, is a rig on the ground. Jarvis & Holm's No. 1 Narcome, SE cor. NW SW, Section 9-7-8, has been completed for 435 bbls. in sand 2,940-78 feet. Minnehoma Oil Co.'s No. 2 Brown, SE cor. NE NE, Section 17-7-8, made 41,000,000 feet of gas from sand 2,905-22 feet.

Jefferson County

W. H. Smith's No. 1 McClarty, SE cor. NW NE, Section 18-4s-8w, is dry and abandoned at 2,667 feet.

Love County

Batson, Starrett & Autry's No. 1 Autry, SW cor. NW NW, Section 26-6s-2, is dry and abandoned at 530 feet.

Marshall County

W. E. Summers and others' No. 1 Sparlin, NW cor. NE, Section 2-6s-6, has been abandoned at 902 feet.

Muskogee County

E. Price and others' No. 1 L. Green, SE cor. SW SW, Section 20-14-17, is drilling at 325 feet. C. W. Brown's No. 1-A V. Smith, SW cor. NW, Section 14-15-15, has been completed for 176,160 feet of gas in sand 754-813 feet. H. L. Jolly's No. 2 Spaulding, NE cor. SE SE NE, Section 8-15-18, made 500,000 feet of gas from sand 845-60 feet. Braman Oil Co.'s No. 3 Jackson, SW cor. NW,

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SOUTHWEST WELDING ASSOCIATION HOLDS ITS ANNUAL CONFERENCE

By L. E. Bredberg

ARLINGTON, Tex., Apr. 25.—Pipe line company representatives, gas company men, construction superintendents and foremen, and many others interested in all phases of welding took advantage of an interesting two-day conference held in the engineering building of the North Texas Agricultural College.

The Southwest Welding Association was organized at Arlington, Tex., March 14, 1930, after having witnessed three previous meetings which drew a larger attendance each year, this association being formed to sponsor and promote the annual welding conference held at the college.

W. M. Murphy was elected president of the association in 1930 with W. S. Mosher, Jr., as first vice president, C. F. Schramm, second vice president, and M. C. Stone, of the college, secretary-treasurer. In the election held Wednesday evening the only changes made in these officers was the election of Fred Schramm as president and of Mr. Murphy as second vice president, due to the fact that Mr. Murphy is now located in Tulsa and cannot devote as much time to the organization.

There are three classes of membership in the association. The A class covers the individual interested in the association and its purposes; the B class is extended to the company men; and the C class is for the sustaining men. The majority of the membership is made up of A class members. The association was formed principally to cover the southwest area, Oklahoma and Texas, and has not yet merged with any national organization, although this has been considered.

Vice Dean George Dickey of the college welcomed the conference, offering the use of the buildings and facilities.

The first paper before the morning meeting on Wednesday was by L. C. Monroe, who cited the growth and adaptability of welding.

"Better and more efficient welding is being forced by qualification tests of welders," said Mr. Monroe, "and the slipshod, careless worker of the past is being displaced with men who have studied the business of welding and applied themselves so as to carry out better work."

Mr. Hansen, head of the K. L. Hansen Engineering Co., Milwaukee, Wis., followed with a paper on "Arc Welding, the Modern Putting-On Tool." He cited the welding of alloys to drilling bits to strengthen and harden the surface, as one of the main examples of the welding process being used in the oil industry, and its increase in use in that industry. He also cited the building up of rotary cable teeth by welding, and many other uses in the oil fields.

M. M. Stetler, of the Mosher Steel & Machinery Co., Dallas, Tex., read a paper on "Welding the Dallas Power & Light Building, the Highest Arc Welded Building Ever Built."

E. L. Wilkins, of the Magnolia Airco Production Co., followed Mr. Stetler.

M. C. Stone, head of the engineering and trades department of North Texas Agricultural College, stressed the need for training and education of engineers and welders, holding that better training of welders would pay the companies for the investment made in such training. "Welding engineering," said Mr. Stone, "is as much of a profession as electrical, civil and mechanical engineering, and growing more and more in importance, and should be treated as a profession."

Wednesday evening an informal dinner was held in the college dining room at which time E. E. Davis, dean of the college, and George L. Dickey, vice dean, addressed the conference.

The meeting reconvened at 10:30 Thursday morning to hear more papers and witness more demonstrations. W. C. Swift, of the American Brass Co., Kenosha, Wis.; O. S. Gray, of the college; Cyrus K. Rickel, of the Big Three Welding & Equipment Co., Fort Worth, Tex.; and a representative of the Linde Air

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McPherson County Pools Are Extended

Ritz-Canton Field and the Decker Gas Area in Kansas Are Broadened and Their Potential Production Increased

By W. A. Spinney
Staff Correspondent, Kansas Fields

With the discovery of new wells extending the Ritz-Canton and Decker gas fields in McPherson County, indications are the production in the field may extend to the northwest until it connects with the Anderson Pool, the original oil producing area in the county located about 4 miles to the northwest. The most recent test to find oil in the Decker gas field, which is only 1½ miles northwest of the Ritz-Canton area, is the Stearns-Streeter Co. and Derby Oil Co.'s No. 1 Chindberg, C NE NW, Section 15-19-2w, which was flowing 20 bbls. of oil an hour and making 2,500,000 feet of gas a day from the chat at 2,932-82 feet.

New wells are adding to the potentials of the Ritz-Canton area and Boyle-Grossman Drilling Co.'s No. 1 Smith, NW cor., Section 29-19-1w, another half mile extension to the area, establish a potential of 1,928 bbls. of oil a day from the Viola lime at 3,416-36 feet. Under the unit proration plan now in effect in the area the well is allowed to produce 290 bbls. of oil a day.

The State's daily average production continues to be held at steady levels. The average for the week ending April 25 was approximately 100,500 bbls. per day, compared to 100,750 bbls. a day for the previous week.

Another interesting area is being developed in Reno County, where two wildcat tests found showings of oil and gas. Continental Oil Co. and Shell Petroleum Corp.'s No. 1 Blake, SW cor. SE SE, Section 23-23-4w, which had 2,500,000 feet of gas at 3,291 feet in the chat top of which was found at 3,267 feet, increased to 8,500,000 feet with deeper drilling to 3,309 feet, where it is now shut in. It is located about 3 miles southwest of the nearest production, which is found in the Study-Turner Pool. The other test extends production in the Study-Turner Pool, of Reno County. Derby Oil Co.'s No. 1 Goering, in Section 1-23-4w, was slopping over with oil from the chat at 3,336-41 feet. The test was being drilled with rotary tools and no estimate was made of the oil showing. The first oil showing was found in a core taken at 3,336 feet, and work at the test was suspended on account of bad weather. Another showing of oil was found at 1,200 feet.

200 Bbls. Per Hour

Another large well was completed in the south end of the Ritz-Canton Field, Phillips Petroleum Co. and Tom Palmer's No. 3 Winn, NE cor. NW SW, Section 7-20-1w, McPherson County, was flowing more than 200 bbls. an hour and is estimated at 4,800 bbls. of oil a day. An actual 12-hour gauge showed the well made 2,420 bbls. The well was first making 30 bbls. an hour from the chat at 2,930-82 feet. It was drilled 1 foot deeper to 2,983 feet where the production increased to 200 bbls. an hour. It has been pinched in slightly and is being produced under a back pressure of 60 pounds. The gas is estimated at 2,500,000 feet a day.

Another well found production in the Viola formation and extended production a half mile to the east in the Ritz-Canton Field. Tidal Oil Co. and Beard Drilling Co.'s No. 1 Day, SW cor. NW SW, Section 32-19-1w, found a showing of oil in the top of the Viola at 3,419 feet.

McPherson Oil & Gas Co. and Shell Petroleum Corp.'s No. 2 Decker, C NE, Section 11-19-2w, on the east side of the Decker gas field, was completed for 38,000,000 feet of gas. The first gas was found in the chat at 2,895-2,920 feet, where it made 21,250,000 feet and with deeper drilling the gas increased to 30,000,000 feet at 2,909 feet, and at 2,929 feet to 38,000,000 feet with 880 pounds rock pressure.

Lario Oil & Gas Co. and Shell Petroleum Corp.'s No. 1 Sellers, SW cor. NE, Section 31-19-1w, was shut in for 21,000,000 feet of gas from the chat at 2,939-42 feet. The top of the chat was found at 2,938 feet and the 8-inch casing was set at 2,933 feet.

United Petroleum Co. and others' No. 1 Laquemont, NE cor. NW SE, Section 20-19-1w, on the east side of the Ritz-Canton Field, was completed for a large well estimated at 40,000,000 feet a day. The well blew in unexpectedly and was shut in. The gas was found in the chat.

A Western Extension

The Ritz-Canton area was given another extension during the week by Wakefield and others' No. 1 Koehn, NE cor. NW, Section 36-19-2w, in the southwest edge of the field, flowed 50 bbls. of oil the first hour from the chat at 2,906-65 feet. It extends production a half mile to the west.

Lario Oil & Gas Co.'s No. 1 Laquemont, NW cor. SW NE, Section 6-20-1w, in the south end of the field, made 750 bbls. of oil in 12 hours after a 15-quart shot. The well established a potential of 1,556 bbls. of oil from the Viola at 3,405-15 feet.

The first test in the Ritz-Canton area to find water in the Silicious lime was completed during the week. Madison and others' No. 1, SE cor. Section 24-19-2w, on the west side of the oil-producing area, found a hole full of water in the Silicious lime at 3,570-73 feet and may be abandoned.

Russell County Developments

Stearns-Streeter Co. and others' No. 1 Miller, SE cor. SW SE Section 30-14-13w, a wildcat northeast of the Ochs Pool, in the southeastern part of Russell County, found the first showing of gas at 1,880-96 feet. It is the first showing of gas logged in any well in the vicinity at this depth. Other showings were logged at 2,285 and at 2,306 feet, and the most recent showing was found at 2,355 feet in the regular Fairport formation. The gas was estimated at 1,000,000 feet a day, in all the formations. The test was drilling deeper at 2,335 feet.

Another wildcat test in Russell County that found a favorable showing of oil but is still shut down is Agate Oil & Gas Co.'s No. 1 Rockefeller, SE cor. Section 6-13-12w. The first oil found in the test at 3,042-44 feet, testing six bailers of oil an hour. It is now shut down at 3,374 feet and is believed to be running favorably on structure compared to another test drilled about a mile and half to the northwest. It is expected to be drilled to the Silicious lime.

In Sedgwick County

A new Viola lime well was added to the Greenwich Pool, in Sedgwick County, the first completion in several months in the pool. E. F. Jones and Shell Petroleum Corp.'s No. 1 Lygrisse, NE cor. SW Section 15-26-2, found oil which rose 2,500 feet in the hole from 3,200-04 feet in 1 hour and 10 minutes. Tankage was erected and the big pipe will be pulled preparatory to making a production test. The well is located about a quarter of a mile northeast of the town of Greenwich.

Lario Oil & Gas Co. and O. J. Connell and others' No. 1 Heckard, SE cor. NW, Section 18-27-2, a half mile north of production in the Eastborough Pool in Sedgwick County, found water in the chat and was drilling deeper to the Viola formation. Showings of oil were found at 2,990 feet and at 3,017 feet.

Derby Oil Co.'s No. 1 Rimel, NW cor. NE NE, Section 30-27-2, an old producer in the Eastborough Pool, was fishing for two strings of tools while attempting to drill deeper. The well was producing from the Simpson sand and was making around 180 bbls. of oil a day. The owners were trying to drill the well to the Silicious lime.

Scouting the Wildcats

Dewey & Mitchell and others' No. 1 Greenwalt, C SW, Section 17-19-16w, in the southeastern part of Rush County, found a showing of gas at 2,130 feet, and it was drilling deeper at 2,200 feet.

Barnsdall Oil Co.'s No. 1 Turner, NW cor. SW, Section 28-20-10w, in Rice County, found water in the Schurr sand at 3,265-69 feet and the casing was being landed to the bottom of the hole to shut off the water. The test will be drilled deeper to the Silicious lime. The well is a mile southwest of the Schurr Pool. Wells in the Schurr Pool are producing from the Schurr sand.

Swaim Oil Co.'s No. 1 Taylor, C NW, Section 21-25-24w, Ford County, has resumed drilling operations after a fishing job. The test was at 4,750 feet. Carter Oil Co.'s No. 1 Everett, C NE, Section 22-29-21w, Ford County, was drilling at 2,500 feet. It is located on a large block of leases.

In the northwestern part of the State J. G. Durham and others' No. 1 Weaver, SW cor., Section 3-2-35w, Rawlins County, was shut down at 2,750 feet. It is located within a few miles of the Nebraska State line.

Cress and others' No. 1 Sharpe, SE cor., Section 13-20-10w, near Raymond, in Rice County, was shut down after finding a hole full of oil in the Silicious lime at 3,333-39 feet. The test is located about 4 miles northeast of the Raymond Pool, in the same county.

In Ellsworth County, J. A. Alyward and others' No. 1 Stratsman, SE cor. NW SE, Section 1-17-10w, was shut down awaiting a pipe line connection after swabbing 117 bbls. of oil in two hours from the Silicious at 3,255-71 feet. In the northern part of Ellsworth County, Milton and others' No. 1 Kester, SE cor. NE, Section 6-14-9w, found 2,000,000 feet of gas at 2,018 feet, and was drilling deeper at 2,100 feet. Hershey and others' No. 1 Schultz, C NE, Section 9-14-8w, has resumed drilling operations at 500 feet after being shut down at 400 feet. More wildcat tests are being drilled in Ellsworth County at the present than any other county in the State.

Butler County

Blaksley & Wentz' No. 2 Holliday, CSL SW NE, Section 24-27-4, has been completed for 2,750,000 feet of gas in chat 1,690-99 feet.

Cowley County

Tom Fine and others' No. 1 Boyd, NW cor. NE, Section 32-32-4, has been abandoned at 3,163 feet.

Elk County

Ferguson and others' No. 1 Ferguson, SW cor. NE SW, Section 23-30-8, has been deepened to chat 2,911-12 feet and completed for 135 bbls.

Lyon County

Sheedy and others' No. 1 Bush, C W half SE, Section 10-20-11, is a rig.

McPherson County

Rosenthal and others' No. 1 Knudson, SW cor. SE, Section 23-19-2w, is moving in tools. W. C. McBride, Inc.'s No. 1 Finkle, C NW NW, Section 23-19-2w, has been completed for 9,000,000 feet of gas in chat 2,910-57 feet. Palmer and Phillips Petroleum Co. and Shell Petroleum Corp.'s No. 1 H. Winn, NE cor. NW SW, Section 7-20-1w, has been completed for 2,420 bbls. in 12 hours in chat 2,930-83 feet.

Morton County

Texas Interstate Pipe Line Co. and others made location for No. 1 Simmons, C SE, Section 16-32-39w.

Morris County

Borden and others staked location for No. 1 Atkinson, SW cor. SE, Section 18-18-7.

Rice County

Solar Oil Co. made location for No. 1 Roelfs, SE cor. NW, Section 3-19-10w.

Stevens County

Texas Interstate Pipe Line Co. made location for No. 1 Loflin, C SE, Section 1-33-38w. Location was made for No. 1 Geyer, C SW, Section 2-33-38w. No. 1 Crane is a location, C NW, Section 15-33-38w.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Syndicate Oil Co.'s No. 1 Boertz, NW SE SE Sec. 13-18-12w	Fishing 2,140 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Shut down 2,065 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Drlg. 2,440 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14	Shut down 1,300 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Shut down 1,250 ft.

COWLEY COUNTY

Fisher et al's No. 1 Hurt, C SW SE SE Sec. 11-34-3	Rig.
Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8	Shut down 1,040 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Shut down 3,850 ft.

ELLSWORTH COUNTY

Gilmore Oil et al's No. 1 Sturm, NW SW Sec. 31-17-9w	Drlg. 2,740 ft.
Hershey et al's No. 1 Schultz, C NE Sec. 9-14-8w	Shut down 400 ft.
Alyward et al's No. 1 Stratman, SE NW SE Sec. 1-17-10w	Silicious 3,255-71 ft.; 117 bbls. 2 hrs.; shut in.
Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 32-16-10w	Shut down 1,130 ft.
Milton et al's No. 1 Kester, SE NE Sec. 6-14-9w	Drlg. 2,018 ft.; making 2,000,000 ft. gas.

FORD COUNTY

Carter Oil Co.'s No. 1 Everett, C NE Sec. 22-29-21w	Drlg. 2,257 ft.
Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Drlg. 4,730 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Clark, SW NE NE Sec. 11-9-25w	10-in. csg. 4,040 ft.; fishing.

HARPER COUNTY

Beeler et al's No. 1 Bear, C NE Sec. 21-36-6w	Shut down 1,830 ft.

HARVEY COUNTY

Empire-Shell's No. 1 Showalter, NW SE Sec. 23-23-2w	Drlg. 3,220 ft.

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 36-27-10w	1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft. 6,000,000 ft. gas; at 2,123-42 ft. 3,000,000 ft. gas; showing oil 3,385 ft.; T. D. 3,441 ft.; S. D.; estimated at 600 bbls. a day.

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Gasoline is the most important stuff in crude oil and we ought to get every possible drop of it out of every barrel of crude

That means Dubbs cracking

Skim off the straight-run and Dubbs crack what's left

To the refiner that means:

Less crude oil to pay for

Better gasoline to market

Less fuel oil to sell at a loss

More profit

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Wildcatters Active in Bossier Parish

New Test in Beauregard Parish. Extensive Campaign in Shelby County, Texas. Good Mississippi Gasser

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 27.—Reports of oil shows in several interesting wildcats and numerous locations for tests in widely scattered areas in this division were the only developments of interest during a week that was singularly barren of results of any importance in any of the active fields. The Red Hawk Oil Co. has cored several feet of likely looking sand in its No. 1 Matthews, Section 11-23-9, Webster Parish, and while a drill stem test from 2,782-97 feet was far from satisfactory, the operators are arranging to set casing and attempt to bail the well in. This test is about 4 miles west of the farthest westward extension of the Haynesville Field.

Another wildcat that is being closely watched, is Andrews & Davlin's No. 1 Nattin, in Section 15-22-14, Bossier Parish, the location being 5 miles east of Hosston (Caddo) production. They are coring and testing at 2,950 feet. In Caddo Parish, United Production Co. is running tubing to test its No. 1 Emmons, Section 27-23-16, at 5,541 feet. The company's other deep test in this area, No. 1 Fortner, Section 5-22-16, is coring at 5,535 feet. Both of these wells are located in the Trinity gas area of North Caddo Parish and are expected to be big producers of the highly saturated gas found in that section.

In Bowie County, Texas, Lee Timberlake and others are reported to have cored saturated oil sand and shale from 2,698-99 feet on their No. 2 Tidwell, L. M. Rice Survey. The hope for a well at this depth met with discouragement however, when salt water sand was cored from 2,699-2,718 feet and the operators are arranging to deepen.

Wildcatters Are Active

Dr. W. N. Hankins has spudded in on his No. 1 Newell, Section 12-19-11, Bossier Parish, and will make a deep test unless production is found in paying quantities in some of the shallow sands. This well is located 2 miles northeast of the Bellevue shallow field and will be watched with interest since H. I. Morgan has several good gassers in the Trinity sand around the 1,800-foot depth 4 miles southwest of the Hankins test.

Probably the most interesting test started in Louisiana during the week, was a wildcat in Beauregard Parish. The Beauregard Oil & Gas Co. has secured a permit to drill No. 1 Cochran, Section 34-4s-12w. This test is between the Sabine uplift and the coastal fields and in, what many operators believe to be, potentially producing territory, especially in the deeper formations.

In Panola County, Texas, Moses & Wallace have derrick up for No. 1 Daniel, Isabel Hanks Survey, for a 5,000-foot test to the Trinity sand. They have a block consisting of 7,500 acres. The Arkansas-Louisiana Pipe Line Co.'s No. 13 Louis Werner, B. C. Jordon Survey, in the eastern part of Panola County is being watched closely. The well is below the 4,600-foot level and a good gasser is expected. Gassers in this section, when drilled below 4,500 feet, usually have a flow of from 25,000,000 to 100,000,000 feet of wet gas with a high gasoline content.

Proration in other fields in East Texas is expected to turn many operators to drilling for gas, and from present indications Panola County will get considerable play in the near future. The gas from this area is distributed to Shreveport, Beaumont, Houston and other cities by the United Gas system.

Shelby County also has an intensive drilling campaign on, five rigs running and several others rigging up on large blocks. Bradley & Kadane spudded in this week on their No. 1 Ashberry, G. W. Mitchell Survey. This test is in the immediate vicinity of two tests drilled several years ago, one of which by the Southern Production Co. encountered a good show of oil at less than 3,000 feet. E. L. Chapman is drilling in broken shale and chalk at 2,665 feet on his No. 1 Pickering Lumber Co., C. E. Henry Survey, 8 miles northeast of the Bradley-Kadane well, and Henry Maulding is drilling at 1,000 feet on No. 1 Frost Lumber Co., A. D. Fountain Survey. The Sloan Prospecting Co. is making two tests in Shelby County, one of which, No. 1 Windham on the A. H. English Survey, has spudded in and is drilling in the Wilcox formation at 1,410 feet.

Ten Wells Completed

Ten wells were completed in the area during the week, and three locations were abandoned. Rankin County, Mississippi, added a good gasser when J. T. Hester completed No. 1 Ellis, Section 12-5-1, with an estimated flow of 35,000,000 feet. The total depth was 2,398 feet. The only successful completion in Arkansas was the Ozark Natural Gas Co.'s No. 1 Bryant, Section 28-8-30, Sebastian County, which was brought in making 3,250,000 feet of gas from a depth of 1,557 feet. Shreveport Oil Corp. registered the only producer in Louisiana with the completion of its No. 8 Hicks, Section 32-21-15, Caddo Parish, as a 150-bbl. pumper.

Harrison and Marion Counties in East Texas were practically eliminated as producing areas from the Woodbine formation with the completion of two dry holes. Corona Petroleum Co. added another failure for Harrison County when it abandoned No. 1 Bohler, S. F. Sparks Survey, in Georgetown lime at 3,160 feet. The Sinclair Oil & Gas Co. in Marion County, abandoned its No. 1 D. R. Coulter, W. Russell Survey, in the same formation at 3,910 feet.

The fields showed a net decrease of 95 bbls. in daily pipe line runs for the week. Louisiana showed a net gain of 110 bbls. due to an increase in the Zwolle Field of 215 bbls. but this was offset by a decrease of 205 bbls. daily in the Arkansas fields. Daily average runs for the several pools were:

NORTH LOUISIANA

Caddo, light	7,275
Caddo, heavy	2,805
Homer	3,280
Haynesville	5,990
DeSoto-Red River	2,685
Elm Grove	500
Bellevue	575
Cotton Valley	1,740
Urania	4,500
Pleasant Hill	459
Sarepta-Carterville	1,245
Zwolle	7,515
Holly	570
Total North Louisiana	39,130
Previous week	39,020
Increase	110

ARKANSAS

El Dorado	3,620
Smackover, light	4,120
Smackover, heavy	31,870
Stephens	840
Nevada	1,000
Lisbon	770
Champagnolle	2,940
Bradley	50
Urbana	1,580
Total Arkansas	46,790
Previous week	46,995
Decrease	205
Both states	85,920
Previous week	86,015
Decrease	95

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH

H. I. Morgan's No. 13-A Kendrick, 669 ft. E, 330 ft. S, NW cor. SE SE, Sec. 22-19-11.... Began Apr. 18; set 10-in. 135 ft; drlg. 420 ft.

CADDO PARISH—GREENWOOD

Company, farm and location—	Remarks:
Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16	Temporarily abd.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E, NW cor., Sec. 17-16-16	Location temporarily abd.

CADDO PARISH—OIL CITY

Trio Corp.'s No. 1 Levee Board, 212 ft. S, 500 ft. E, NW cor., Sec. 17-20-15.... Set 6-in. 2,100 ft; T.D. 2,265 ft.

CADDO PARISH—PINE ISLAND

Haynes Bros.' No. 2 Spell, 956 ft. W, 200 ft. N, SE cor. SE, Sec. 15-21-15.... S.D. 3,962 ft.

Shreveport Oil Corp.'s No. 8 Hicks, 600 ft. S, 800 ft. E, NW cor., Sec. 32-21-15.... Completed Apr. 16; 150 bbls.

Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15.... Set 10-in. 150 ft; S.D.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feasel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4.... Location.

OUACHITA PARISH

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,469 ft. W, NE cor., Sec. 49, in Sec. 50-18-4.... Location.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4.... Location.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No. 5-C Thomason, 350 ft. S, 217 ft. E, SW cor. NE NE, Sec. 21-16-6e.... Estimated 30,000,000 ft. gas.

Hope Prod. Co.'s No. 2 C. M. Noble Hrs., 2,538 ft. W, 1,980 ft. S, NE cor. SE, Sec. 36-16-5.... Began Apr. 16; set 12½-in. 175 ft; 8-in. 864 ft; drlg. 1,180 ft.

Palmer Corp.'s No. 1 Clement, 3,960 ft. N, 1,320 ft. E, SW cor., Sec. 10-16-6.... Rigging up.

Southern Carbon Co.'s No. 1 J. O'Neal, 660 ft. N, 760 ft. E, SW cor., Sec. 36-17-4e.... Drlg. 2,060 ft.

Southern Carbon Co.'s No. 2-B Thomason, 1,980 ft. S, 2,080 ft. W, NE cor., Sec. 23-16-6.... Waiting on cmt. 2,285 ft.

United Carbon Co.'s No. 1 Mann, 1,320 ft. S, 1,921 ft. W, NE cor., Sec. 12-16-5e.... Set 6-in. 2,285 ft.

United Carbon Co.'s No. 2 Cooper, 660 ft. N, 3,551 ft. E, SW cor., Sec. 13-16-6.... Location.

SABINE PARISH—ZWOLLE

W. M. Coats' No. 3 Sabine Lbr. Co., SW cor. SW NW, Sec. 1-7-12.... Fishing 2,259 ft.

(Continued on Page 73)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location—	Remarks:
Coyle Bros.' No. 1 Lawhorn, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8	S.D. 2,854 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14.... Drlg. 2,875 ft.

Flint River Oil Co.'s No. 1 C. L. DeMoss, 200 ft. S and E, NW cor. SE NW, Sec. 32-22-13.... Moving in rig.

Dr. W. N. Hankins' No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11.... Rig set up.

Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13.... Arranging to deepen; T.D. 1,600 ft.

CADDO PARISH

Garry M. Gordon's No. 1 Hatcher, 560 ft. E, 600 ft. S, NE cor. NW, Sec. 11-17-15.... Location.

Pelican Nat. Gas Co.'s No. 1 Cooper et al, 1,810 ft. E, 1,064 ft. S, NW cor., Sec. 29-18-14.... Drlg. shale 1,450 ft.

United Prod. Co.'s No. 1 Emmons, 1,327 ft. E, 660 ft. N, SW cor., Sec. 27-23-16.... Arranging to test 5,541 ft.

United Gas Public Service Corp.'s No. 1 Fortner, 330 ft. S, 330 ft. E, NW cor., Sec. 5-22-16.... Coring 5,535 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4.... Derrick.

Hudson et al's No. 1 Burton, Sec. 35-12-2e.... S.D. 2,799 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6.... S.D.; W.O. 3,097 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7.... S.D. 3,000 ft.

CONCORDIA PARISH

Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-5e.... S.D. 3,622 ft.

DE SOTO PARISH

Dupree-Fountain's No. 1 J. M. Nabors, 250 ft. S, 250 ft. W, NE cor. NW, Sec. 5-13-11.... Coring 2,360 ft.

Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15.... S.D. 2,350 ft.

C. D. Neff et al's No. 1 Ramsey, 1,000 ft. W, 400 ft. S, NE cor. SE, Sec. 33-13-16.... S.D; W.O; bit in hole 3,000 ft.

Ben Merritt tr.'s No. 1 Walluma, NE cor. SW SW, Sec. 29-12-12.... Rigging up.

E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15.... Moving in rig.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10.... T.A. 4,091 ft.

J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10.... S.D. 3,156 ft.

Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10.... S.D. 1,518 ft.

C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10.... Tested dry; S.D. 1,380 ft.

RED RIVER PARISH

La. Oil & Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11.... Spudded in; S.D. 50 ft.

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 32-12-10.... T.A. 3,010 ft.

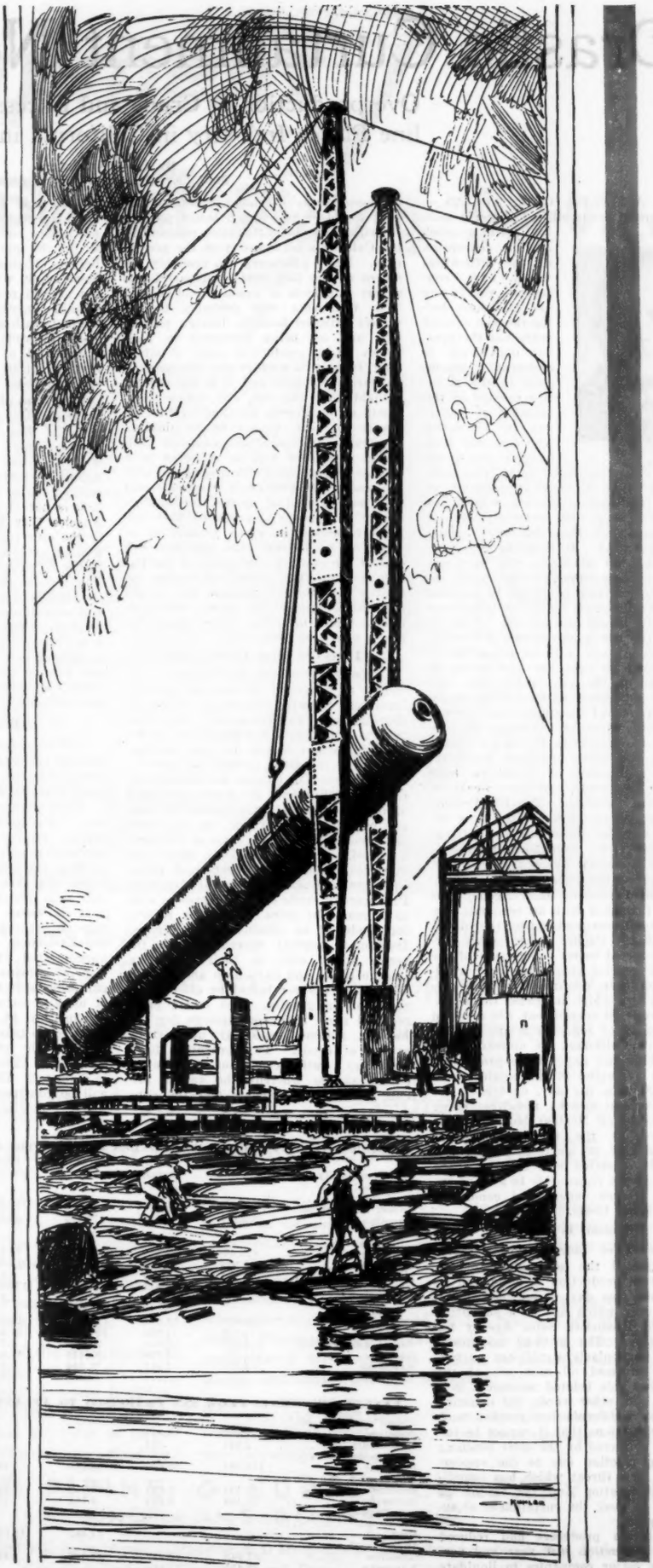
RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5.... Derrick.

Southern Carbon Co.'s No. 1 Rosengraut & Ducomb, 2,000 ft. E, 660 ft. S, NW cor., Sec. 24-17-5.... Set 6-in. 2,285 ft.

(Continued on Page 83)

RAISING the bubble tower during early stages of construction of a Cross cracking plant in a middle west refinery. Kellogg facilities for the design, manufacture, and erection of equipment are complete, and Kellogg engineers are exacting in the accomplishment of construction work as scheduled.



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Drastic Curtailment Needed on Coast

Overproduction of Crude and Excess Supply of Gasoline Places Industry in California in Serious Position

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 25.—Producers of crude oil in California have formed a much clearer conception of the difficulties which have confronted refiners and marketers during the past several years but the present outlook is somewhat analogous to the situation created by the issuance of a pardon to a convict who has just been hanged. Just as the pardon came too late, many producers are wondering if their appreciation of general conditions is not also a little too late. The delay has certainly been a costly one, but then education comes high these days. It is to be regretted, of course, that producers who have met curtailment requirements in every instance are likewise penalized by existing low prices for crude oil. This is particularly interesting because the effectiveness of the newly organized Oil Producers Sales Agency will be minimized if some producers hold out and refuse to co-operate on the assumption that they can take advantage of conditions resulting from unified distribution of current production. None of the crude oil curtailment movements in California during the past few years has been successful because a number of producers have failed to co-operate and thus weakened the general situation. The Oil Producers Sales Agency is recognized as a necessity by major producers and refiners because they, like independent producers, desire stabilization and a fair price for crude and refined oils.

The Oil Producers Sales Agency was recently furnished with an economic survey of conditions confronting the oil industry on the Pacific Coast. This survery, conducted under supervision of the operators general committee on curtailment, definitely confirmed several previous surveys which indicated the necessity of crude oil curtailment. It revealed the necessity of reducing crude oil production in California to approximately 460,000 bbls. per day. State production has been averaging in the neighborhood of 525,000 bbls. per day, or higher, for the past several months, notwithstanding an allowable of 500,000 bbls. per day established as the maximum several months ago by the curtailment committee. This objective was never reached and is no doubt responsible to a large extent for present demoralized conditions on the Pacific Coast.

Situation Is Serious

A number of independent operators have suggested the advisability of reducing state production of crude oil to 450,000 bbls. per day, as outlined in the recent survey which has been submitted to the Oil Producers Sales Agency for consideration. The analogy mentioned above is particularly significant as several well-informed oil men are of the opinion that this belated movement is a little late. In other words, the situation confronting California has reached such serious proportions that it cannot be immediately corrected by the mere pinching back of production due to the appearance of a new threat which has complicated the situation and the failure of producers to meet the curtailment objective last year.

If California producers had reduced crude oil production last year and permitted the major companies to liquidate excessive stocks of crude and refined oils, they would be in a much better position to withstand the difficulties confronting the California oil industry at the present time. Many producers are probably unaware of the fact that intercoastal and export shipments of gasoline and fuel oil from California will probably be adversely affected both by foreign production and oil being produced in East Texas. Low production costs of oil in East Texas will work to the detriment of California shippers and it is the present thought that this oil will reduce shipments of California gasoline to the Atlantic and Gulf Coasts to an absolute minimum. Decreased shipments of California petroleum will be reflected in a smaller demand for California crude, with the result that California producers will only have a limited market for production. It appears improbable that the mere reduction in state production of crude oil to 450,000 bbls. per day will correct the existing conditions on the Pacific Coast. This would of course alleviate conditions somewhat but would not entirely correct the present situation unless some distinction were made between light and heavy oil.

Excess of High Gravity Oil

Crude oil produced in California has shown a consistent increase in gravity from year to year. Kettleman Hills and Belridge will raise the gravity later this year if both fields are permitted to become important factors in state production. The increased amount of light refining crude has caused an overproduction of gasoline with the result that light oil is only commanding a price of 35 cents per barrel. Heavy crude, on the other hand, commands a top price of 65 cents a barrel. Crude oil between these two extremes commands a graduated price. This has resulted in a peculiar situation. Producers of crude oil are at present able to increase the price which they receive for crude oil by eliminating the lighter fractions. Several operators have inserted steam coils in their respective storage tanks and have been able to add 10 or 15 cents per barrel by effecting a reduction in gravity. The added price received more than compensates for the loss in volume, especially on certain grades of crude. Two operators have rigged up a rather crude but effective recovery system whereby the vapors are run through a condenser and the condensate sold to gasoline jobbers. Some of this gasoline is entering the bootleg market in southern California, although so far the quantity has been rather negligible. If this practice becomes general, however, it will result in a revision in the present price structure. If the local gasoline market becomes much weaker we may anticipate another downward revision in crude oil prices. This is merely conjectural at the present time but a further cut in crude oil prices is not at all improbable.

Efforts to effect a complete suspension of production activities in the Rosecrans Field of Los Angeles Basin have been unsuccessful. A number of discussions were held and the matter is at present definitely tabled. The subject may be revived again, however, although the outlook is not at all encouraging. The Los Angeles City Council indorsed a report of the city planning committee opposing wildcat exploration in the Mount Washington district of Los Angeles Basin. The report adopted by the city council specifically opposed the drilling for oil and exploitation in any section of Los Angeles where private residences and homes have been erected. The matter of drilling a wildcat on Mount Washington, a small hill, has been before the city council on several previous occasions and has met with a similar fate.

Kettleman Hills

Unless production is held back by compulsory regulation resulting from legislative enactment, Kettleman Hills will become a factor of considerable importance in state production within the next 60 days. The Kettleman North Dome Association expects to have three wells on production in this field before the close of May and a check indicates the probability that the Standard and Superior will also finish new wells within the next six weeks. In order to take care of this anticipated production, directors of the Kettleman North Dome Association appropriated $450,000 for the construction of adequate tankage and a field gathering system for the transportation of oil and natural gas. Two lines, approximately 14 miles in length, will be required to take care of present requirements. The pipe will be welded and consist of 12-inch, 14-inch and 16-inch in diameter. The association's tank farm will be constructed on the eastern flank of the field as this will permit gravity flow from lease tanks to central storage.

Playa Del Rey

Two new wells were finished in the Playa Del Rey Field of Los Angeles Basin during the past week, although neither of them registered substantial production. The Ohio Oil Co. increased its list of producers by completing No. 10 Recreation, a new well in the shallow Del Rey zone. This new well, bottomed at 3,906 feet and finished with a 6⅝-inch liner carrying 480 feet of perforated, registered an initial daily production of 260 bbls., the oil testing 22.2° and showing a cut of 5 per cent. Donley & Barteaux successfully finished their No. 2 Del Rey in the deep Recreation zone and this new well is flowing 570 bbls. of clean 23.5 gravity oil per day. Drilling operations were concluded at 6,224 feet and the hole finished with a 6⅝-inch water string at 5,930 feet and a 4½-inch liner including 286 feet of perforated. The Union failed to secure commercial production in No. 9 Townsite, which was finished in the deep Recreation zone at 6,060 feet, and operations have been suspended. The failure of this project to register commercial production was somewhat surprising as it looked rather favorable during the course of work. The company shot the hole twice in an effort to stimulate production without success. It is the present intention of the Union to carry No. 8 Townsite down into the Schist in order to determine the productive status of the formations below the top of this rock. There is a diversity of opinion regarding the possibility of developing commercial production below the top of this Schist body. On the face of the situation, production just is not possible from Schist formation, but then again the Ohio recently finished a 2,000-bbl. well after taking a 500-foot penetration in the Schist. Several operators are of the opinion, and this seems the only plausible explanation, that the Schist encountered in the Playa Del Rey Field is not true Schist. This supposition is partially confirmed by a microscopic study of core samples which shows minute pebbles instead of the usual sharp angular grains characteristic of Schist.

Huntington Beach

W. E. McCaslin's No. 17 Transport, a deep test in the Huntington Beach townlot area, failed to result in commercial production, notwithstanding swabbing operations extending over a period of several days. The failure of this well to result in substantial production during the initial test does not remove it as a potential producer. Work has been resumed and the hole is being cleaned out preparatory to a further conclusive test. There is no questioning the fact that the results shown by this well and No. 1 Fee of the Superior have been decidedly negative as far as satisfactory results are concerned. Both of these wells show considerable gas during the course of work but failed dismally when given a chance to produce. The exact status of No. 17 Transport is somewhat is doubt due to the presence of salt water which showed 750 grains of salt. There is some question, however, as to whether the well is wet as the company upon reentering the hole discovered a sand bridge which prevented both oil and water from rising in the hole under the stimulation of swabbing operations.

Several new wells have been located in the Huntington Beach townlot area despite the unfavorable results of work undertaken up to the present time. The Wilshire Oil Co. has already been granted permission to redrill and deepen five up-

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	77,405
Fuel oil	.....	.....	.....	.....	.....	71,950
Diesel and gas oil	.....	.....	119,705	17,101	798,729	1,377,098
Gasoline	225,899	32,271	273,425	39,061	4,547,221	5,156,250
Kerosene	.....	.....	.....	.....	41,512	.....
Coastwise—						
Crude oil	423,000	60,429	522,319	74,617	6,181,933	4,849,932
Fuel oil	247,924	35,418	126,900	18,129	4,394,014	5,403,029
Diesel and gas oil	5,527	790	60,349	8,621	504,523	628,706
Gasoline	459,323	65,618	336,771	173,210	3,712,453	3,324,508
Kerosene	.....	.....	12,661	1,809	119,132	33,228
Exports—						
Crude oil	130,074	18,582	86,131	12,304	2,067,358	2,088,533
Fuel oil	78,775	11,254	291,357	41,608	4,510,096	5,367,640
Diesel and gas oil	113,649	16,236	33,259	4,751	1,117,270	1,651,926
Gasoline	364,895	52,128	301,119	43,017	3,172,444	4,977,244
Kerosene	53,138	7,591	71,250	10,217	553,776	1,305,965
Lubricants	.....	.....	12,050	1,721	18,978	10,082

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	88,280
Gasoline	72,495	10,356	.....	.....	187,584	440,188
Lubricants	3,015	431	.....	.....	14,015	2,946
Coastwise—						
Fuel oil	157,392	22,485	33,000	4,714	1,290,162	1,198,260
Diesel and gas oil	.....	.....	.....	.....	88,756	104,327
Gasoline	40,147	5,735	92,757	13,251	873,626	1,273,846
Kerosene	27,173	3,882	6,116	874	83,409	106,349
Exports—						
Crude oil	.....	.....	.....	.....	6,010	3,075
Fuel oil	.....	.....	77,402	11,057	276,278	347,444
Diesel and gas oil	.....	.....	.....	.....	193,548	124,540
Gasoline	167,942	23,992	21,864	3,123	1,075,853	1,200,852
Kerosene	95,451	13,636	.....	.....	285,963	162,499

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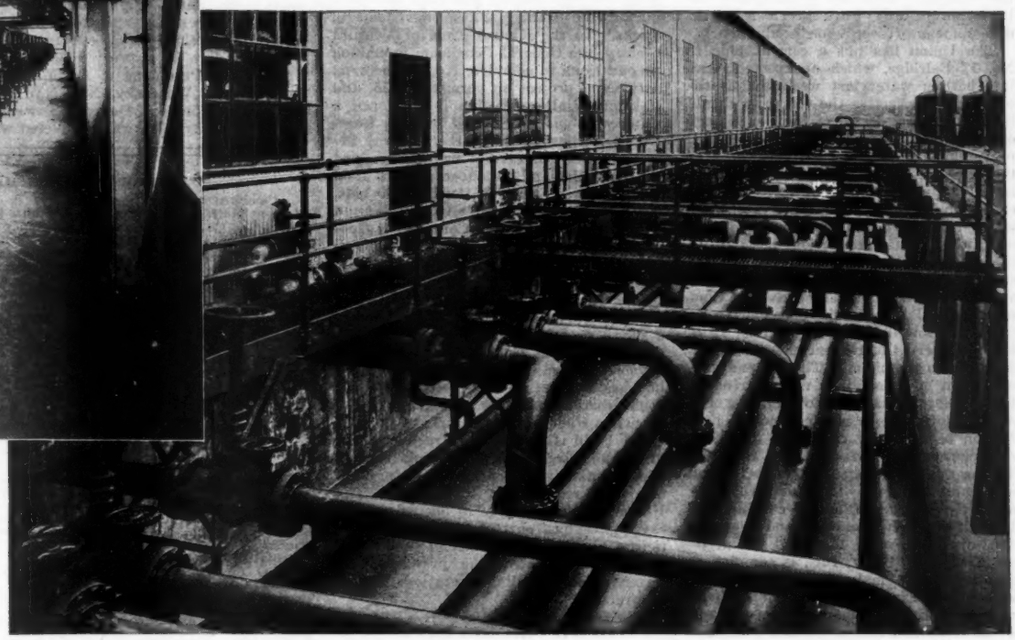

Order for Compressor Piping received on . . . . August 28, 1930
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GRAYCO Station—the world's largest booster station—is conclusive evidence of the wisdom of using "Piping by Midwest" whenever fabricated piping is required in a hurry. The Midwest plants at Houston and St. Louis shipped all of the bends and other fabricated piping for Grayco—346 pieces—within the 19 days following receipt of orders (Sundays and holidays *not* excepted). The pipe sizes ranged from 3 to 10 inches.

Not only has each of the four Midwest plants a highly trained organization and the most modern and complete facilities for quickly and accurately fabricating all kinds of piping—but shipment of large orders can be considerably expedited by dividing the work between two or more Midwest plants. Fabrication is carried on simultaneously in these shops without dividing the responsibility and without sacrificing the Midwest standard of accuracy.

Unquestionably, Midwest has had much more experience in the fabrication of piping for the oil industry than has any other organization. This experience is freely available in the solution of piping problems—it has frequently resulted in simplification of piping design and substantial cost reduction.

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per zone producers at Huntington Beach but this work has been held in abeyance. The Republic Petroleum has recently started rig construction and the Vernon Oil & Refining Co. is expected to start work on a well originally drilled by the San Martinez Oil Co., which was suspended at 5,200 feet. Ben F. Munn has staked location for two new wells, although these projects are in the northwestern end of the field on a different play. There is a definite tendency on the part of operators interested in the townlot section to delay operations pending the outcome of work by McCaslin and the Superior Oil Co. The Superior, which focused the attention of operators on the possibilities of this section several months ago, is deepening two wells to the zone believed to have been discovered in its original deep test. The Union recently secured several drill sites but this was done for protection purposes only as the company does not contemplate the initiation of any work previous to the development of deep zone production.

The Union has put a cement plug in No. 17 Belridge, which unexpectedly ran into bottom water last week, and if the plug proves effective the company should have this North Belridge Field well back on production shortly. No. 17 Belridge, previous to developing bottom water at the rate of 1,500 bbls. per day, showed an initial daily production of 1,200 bbls. of exceptionally clean 40.2 gravity oil. The water trouble encountered by the Union definitely limits production possibilities in the eastern end of the North Belridge structure, and indicates the existence of a small limited field. The Universal Consolidated Oil Co. is still endeavoring to complete its well No. 49 in the Lost Hills Field of Kern County but the outlook is not any too promising. The company recently cut out the 5-inch water string at 4,994 feet preparatory to carrying the well on down before making another production test. When the string of 5-inch was cut and pulled the well came in flowing approximately 25,000 bbls. of hot salt water per day. This flow was subsequently killed, although considerable difficulty was encountered, and preparations are being made to redrill and deepen. George F. Getty, Inc., is completing preparations to make a production test on No. 1-A Lincoln Drilling Co., a test located in the extreme northern end of the Lost Hills Field in Section 12-26-20. This well, which is down 3,940 feet, looked rather promising during the course of work and the outcome will consequently be watched with interest.

Ventura Avenue

Several new wells are being prepared for production in the prolific Ventura Avenue Field although their completion may be delayed as the recent completion of several large wells has made it necessary for the Associated and Shell to exercise extreme care to keep field production within the established allowable. The Barnsdall, which is developing properties in the Elwood Field of Santa Barbara County in conjunction with the Rio Grande, has resumed work on No. 1 Bishop-Evans, a deep well, which is being carried down to determine the potentiality of the Sespe formation which underlies the present productive Vaqueros. This well, which was recently suspended at 4,928 feet because of mechanical trouble, is of more than passing interest. Previous to the suspension of work, No. 1 Bishop-Evans registered a short flow of high gravity oil which may have come from the Sespe formation. At any rate, work on this project will bear watching during the course of the next several weeks. In the Rincon Field of Ventura County, the General Petroleum is making preparations to complete No. 2 Needham, a tideland project on permit No. 55, and if commercial production is developed a third well will be started on this lease. No. 2 Ferguson, which the General Petroleum finished several months ago and the only tideland producer in this field at the present time, is flowing 160 bbls. per day from 3,100 feet. In the Capitan Field of Santa Barbara County, the General Petroleum is making preparations to complete No. 10 Erburu, and this well should be on production in the near future. On the More Ranch in the Goleta area, the General Petroleum has reached a depth of 5,145 feet in No. 3 More, a deep test. The General Petroleum has finished two gas wells in the Goleta area but has not yet succeeded in developing commercial production of oil. In the Purisima Field of Santa Barbara County, Oscar Field is making preparations to redrill and deepen No. 3 Union Annex, which was given a preliminary production test recently at 3,145 feet. The Union Annex property is located in the extreme eastern part of the Purisima anticline, and, while commercial production may be anticipated, the prevalence of water renders drilling operations rather hazardous.

WITH CHICAGO BANK

George G. Shallenberger, formerly an officer and director in the Marland Oil Co. at Ponca City, Okla., was recently made a vice president of the Foreman State National Bank in Chicago, Ill.

NEW EXTENSION AT MT. PLEASANT FLOWS OIL OVER DERRICK TOP

By Paul A. Elliott

MUSKEGON, Mich., Apr. 27. — The most important new extension of the Mount Pleasant Field was brought in this week when the Kalamazoo Improvement Co.'s No. 1 George Hornick, SW NW SW, Section 15-14n-2w, Greendale Township, Midland County, struck the Dundee sands at an unannounced depth. Oil flowed over the top of the derrick when the sand had been penetrated less than a foot. This well is about 1½ miles east of production in the main Mount Pleasant Pool, located half in Chippewa Township, Isabella County, and half in Greendale Township, Midland County.

The well continued to flow for intermittent periods of about 8 minutes every four hours until installation of a control head. No estimates as to the probable initial production could be obtained but it was said to be a "very good well."

The Ohio Producing & Refining Co.'s No. 2 Anton Wezensky, NW NW NW, Section 30-15n-3w, Denver Township. Isabella County, also was completed with the largest initial production of any recent new producer in Michigan. Dundee limestone was topped at 3,598 feet and pay sands were encountered at 3,648 feet. The well made about 425 bbls. initial, one of the largest producers completed in the Leaton Pool. It is about half a mile west of the New York Petroleum Royalty Corp.'s No. 1 Marthey with which the field was opened about a year ago. The Marthey well made 540 bbls. initial.

Five other completions, two for oil, one dry gasser and two dry holes, also were reported. The Pure Oil Co.'s No. 3 "B" Iosco Land Co., SE SW, Section 1-14n-3w, Chippewa Township, Isabella County, is good for about 15 bbls. in the Dundee at total depth of 3,584 feet. Dundee limestone was topped at 3,504 feet and pay at 3,537 feet.

Another Pure well, the No. 4 Fred B. Sias, NE SW, Section 8-14n-2w, Greendale Township, Midland County, will be

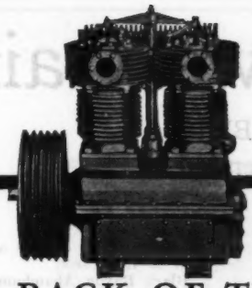
(Continued on page 91)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company and location—	S.T.R.	Depth	Status—
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	5,050	redrilling
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	4,910	sidetracking
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Mesmer City Corp., No. 1 Mesmer, Los Angeles Co.	24- 2-16	4,690	sd. sh. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	suspended
Allison Synd., No. 1 Baldwin, Los Angeles Co.	8- 2-14	5,110	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	3,300	suspended
Cal. Oilfields Corp., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,560	suspended
Carniel Oil Corp., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,214	cemented
Hermosa Expl. Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,800	sd. sh. drilling
Kellogg, W. R., No. 1 Hermosa, Los Angeles Co.	6- 4-14	416	sd. drilling
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6- 4-14	2,733	cemented
Tulsa Oil Co., No. 1 Hermosa, Los Angeles Co.	6- 4-14	2,450	sd. sh. drilling
Thorpe Pet. Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	3,690	abandoning
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	780	suspended
Shelley, C. M., No. 1 Torrance, Los Angeles Co.	12- 4-14	rig	suspended
York & Smullin, No. 1 Watson, Los Angeles Co.	29- 4-13	3,693	testing
Mack Oil Co., No. 1 Chatsworth, Los Angeles Co.	6- 2-16	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	37- 2-10	2,150	sd. sh. drilling
Arden Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3- 2-10	4,620	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	1,092	suspended
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	1,370	cleaning out
The Texas Company, No. 1 Montebello, Los Angeles Co.	4- 2-12	3,214	hd. sd. drilling
Huntington Cent. Oil Co., No. 1 Montebello, Los Angeles	34- 1-11	mtl.	building rig
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	28- 1-12	5,278	suspended
Hammer, Fred, No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,412	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	753	sd. sh. drilling
Neas Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Gesell, T. F., No. 1 Newport, Orange Co.	29- 6-10	1,470	set pipe
Standard, No. 1 Newport, Orange Co.	26- 6-10	4,390	hd. sd. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,690	cleaning out
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	....	location
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	5,250	suspended
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	3,267	plug 2,800
The Texas Company, No. 1 Olive, Orange Co.	7- 4- 9	4,490	sd. sh. drilling
Gleck Oil Co., No. 1 Sunset Beach, Orange Co.	20- 5-11	943	sd. sh. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company and location—	S.T.R.	Depth	Status—
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	6,260	sd. sh. drilling
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,570	suspended
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	6,225	cleaning out
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,800	cleaning out
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,532	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	5,100	Sespe form.
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	2,051	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
South. Cal. Drlg. Co., No. 1 Goleta, Santa Barbara Co.	12- 4-28	1,513	sd. sh. drilling
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	4,191	cleaning out
Bellview Oil Co., No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,486	br. sh. drilling
Johnson, George, No. 1-A Goleta, Santa Barbara Co.	19- 4-27	2,350	Sespe form.
Cuyama Oil Corp., No. 1 Cuyama, Santa Barbara Co.	12-10-27	rig	suspended
Hart Pet. Co., No. 1 Cuyama, Santa Barbara Co.	27-10-26	rig	suspended
Sovereign Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	cleaning out
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
C.C.M.O. Co., No. 2-A Rincon, Ventura Co.	23- 3-24	9,275	br. sh. drilling
Continental, No. 1 Rincon, Ventura Co.	23- 3-24	2,780	hd. sd. drilling
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,591	suspended
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	6,392	sd. sh. drilling
Lockwood Valley Oil Co., well No. 1, Ventura Co.	32- 8-21	1,015	suspended
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-21	2,905	hd. sd. drilling
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	recemented
Kent & McDonald, No. 1 Temblor Hills, Kern Co.	3-32-22	1,672	suspended
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,367	testing
General Pet., No. 1 Belridge, Kern Co.	30-28-21	4,121	br. sh. drilling
The Texas Company, No. 1 Belridge, Kern Co.	22-27-20	5,045	suspended
Standard, No. 2 Belridge, Kern Co.	31-27-20	5,265	Temblor form.
Ohio Oil Co., No. 1 Belridge, Kern Co.	36-27-20	5,980	recemented
Reward Oil Co., No. 1 Belridge, Kern Co.	34-27-20	4,970	sd. sh. drilling
Union, No. 17 Belridge, Kern Co.	36-27-20	5,601	plug back
Continental, No. 1 Belridge, Kern Co.	36-27-20	4,077	sd. sh. drilling
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	rig	suspended
Tom Cannon, No. 1 Belridge, Kern Co.	18-28-22	rig	suspended
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	cleaning out
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	cleaning out
Wicker, Sy, No. 1 Arvin, Kern Co.	12-30-28	1,250	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	8,347	hd. sd. drilling
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	6,333	sd. sh. drilling
Shell, No. 3 Weed Patch, Kern Co.	32-30-29	5,247	sd. sh. drilling
Osborn-Colter, No. 1 Weed Patch, Kern Co.	15-30-29	1,925	cemented
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	6,150	cemented
Mohawk Oil Co., No. 2 Weed Patch, Kern Co.	4-31-29	rig	suspended
Alpine Oil Co., No. 1 Weed Patch, Kern Co.	13-31-29	3,785	sd. sh. drilling
Standard, No. 1 Devils Den, Kern Co.	14-25-18	2,914	hd. sd. drilling
Hannon, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,925	cemented
Cumberland Oil Co., No. 1 Devils Den, Kern Co.	21-26-18	1,590	cleaning out
Langstroth, F. B., No. 1 Blackwell Corner, Kern Co.	14-26-19	rig	suspended
E. J. Miley, No. 1 Blackwell Corner, Kern Co.	17-26-19	rig	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	9,700	cleaning out
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	750	suspended
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,804	suspended
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	5,530	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	4,503	plug 3,685 feet
Carruthers Oil Co., No. 1 Fresno Co.	4-17-20	rig	suspended
Miracle Oil Co., No. 1 Cuyama, San Luis Obispo Co.	17-10-25	314	suspended
Panorama Oil Co., No. 1 Carizzo, San Luis Obispo Co.	7-31-21	4,019	redrilling
Tray El Oil Co., No. 1 Carizzo, San Luis Obispo Co.	7-32-22	1,437	hd. sd. drilling
Cities Service, No. 1 Creston, San Luis Obispo Co.	20-28-15	....	grading
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	5,095	abandoning
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	916	suspended
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	suspended
Schockley, C., No. 1 Pismo, San Luis Obispo Co.	13-32-13	2,897	hd. sd. drilling
Pacific Inland, well No. 1, Monterey Co.	19-23-15	1,150	hd. sd. drilling
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	816	suspended
Irma Investment Co., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,372	sd. sh. drilling
O'Donnell, J. R., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	3,750	plug 3,610
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,304	suspended
Purman, T. H., No. 1 Reed Ridge, Kings Co.	36-23-17	3,230	br. sh. drilling
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Utah Dev. Co., No. 1 Pyramid Hills, Kings Co.	13-24-18	....	grading
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	6,600	sd. sh. drilling
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	1,975	hd. sd. drilling
Pettingall, C. E., No. 1 Porterville, Tulare Co.	15-23-27	850	hd. sd. drilling
Knapp, George, No. 1 Porterville, Tulare Co.	20-23-27	590	reaming
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	870	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,117	hd. sd. drilling
Orland Oil Synd., No. 1 Orland, Tehema Co.	31-23- 3	2,520	sd. sh. drilling
Sargent Oil Co., No. 1 Sargent, Santa Clara Co.	1-12- 3	rig	suspended



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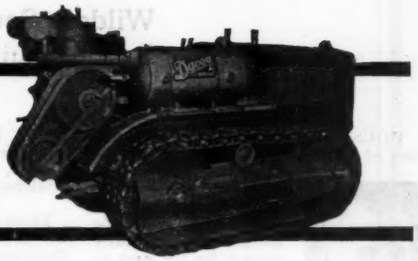

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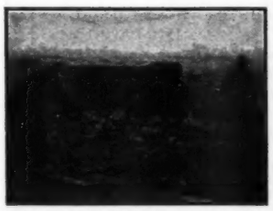
1. Fell trees along right-of-way with air-driven chain saw. (Same tractor then skids trees off to one side of right-of-way.)



2. Operate jack hammers and other percussion tools for removing shale, rock or highway pavement.

3. Use rotary wire brush to clean rust and temporary compounds off pipe before painting.

4. Use cup grinders to smooth pipe cut by torches.

5. Spraying permanent coats of paint on pipe.

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O&GJ 4-30-31

Gulf Coast Production Shows Gain

Wildcat Southwest of Humble Fails. Deep Tests at Moss Bluff, Bayou Bouillon and Bayou Blue Abandoned. Lockport Extended

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 27.—Production of Gulf Coast fields took another jump the past week with an increase in the daily average amounting to 7,673 bbls. This brought the total daily average for the week to 186,371 bbls. and was due to substantial gains at Barbers Hill, Raccoon Bend, Refugio, Pierce Junction, in Coastal Texas and to Lockport in Louisiana, as well as to smaller fluctuations in other scattered fields.

Barbers Hill production reached a new peak during the week with a daily average of 30,014 bbls. The previous peak was during the week ended April 5, 1930, when the average was 29,760 bbls. Between these dates, production of this field has dropped to below 18,000 bbls. daily. The rise to the new peak has followed the increasing development on the west flank of the dome, where a steady run of completions has been made. The prospects of a number of additional good wells in the immediate future predict further increases in the output of this field.

The increase at Raccoon Bend was not due to new wells but rather to further opening of the field, which has been greatly curtailed for sometime. The development in the new northwest extension at Lockport is responsible for the gain in that field's production. Refugio's increase is a reflection of new completions.

The past week was the first in some time that no new wells were added at Barbers Hill, which was reflected in a slight downward trend of production but over the week and several deep wells were testing sands while others were on or nearing the pay horizon. One test was abandoned, this being Yount Lee Oil Co.'s No. 10 Woodward, southeast flank of the dome, which tested salt water at 5,438 feet. Total depth of the hole was 6,484 feet, where it was dry.

Humble Wildcat Fails

An attempt by Sun Oil Co. to extend production at Humble, Harris County, to the extreme southwest flank of the dome to link the pools on the west and south sides met with failure with the abandonment of this company's No. 1 Beck, 11 feet from the north line and 80 feet from the east line of Lot 5, Block 1, Koinm Subdivision, H.E.&W.T. Survey, in shale at 5,516 feet. Being nearly a mile to the southeast of the west flank production and about three-quarters of a mile to the west of the south side pool, this test was a rank wildcat as far as deep drilling was concerned.

With this abandonment, Sun made location for another test in the west flank pool. This will be No. 24 Bender, 24 feet north of Rio Bravo Oil Co.'s No. 2 H.E.&W.T. on Sun's east line. The Rio Bravo test, now drilling, is located in the railroad right of way. Sun also is rigging up to drill No. 16 Bender, a formerly abandoned location, on the north edge of production of this pool. The latter wells are located within the town of Humble.

Damon Mound Completion

For the first time in a year, Damon Mound, Brazoria County, figured in the completion column of the Gulf Coast with the bringing in by Layne and associates of their No. 7-A Wisdom, center of Block 62, Lot A, A. Darst Survey. This well flowed 472 bbls. in the first 12 hours on a quarter-inch choke with an estimated pressure of 400 pounds, 64½ feet of screen being set at 3,708 feet. In this field, D. C. Wellock has made location for No. 1 Hamon, 1,115 feet from northeast line and 60 feet from west line of Block 1, John P. Mills Survey. No other development is under way.

Deep Tests Abandoned

Three deep tests at domes listed among the newer coastal fields were among abandonments on the Gulf Coast during the week. These included one each at Moss Bluff, Bayou Bouillon and Bayou Blue.

At Moss Bluff, Liberty County, Humble Oil & Refining Co. quit its No. 2 Breeding, wildcat on the northwest flank of the dome, in heaving shale at 6,771 feet. This marks the failure of the third attempt of Humble to find production on the north and northeast. The only production at Moss Bluff so far has been on the extreme east.

Humble also abandoned its No. 1 Woodyard Lake, on the extreme west end of Bayou Bouillon, St. Martin Parish, Louisiana, in heaving shale at 6,471 feet. This test is 235 feet south and 55° west of No. 5 Atchafalaya fee, the westernmost production in the field, and is by far the deepest test ever drilled in that district.

At Bayou Blue, Standard Oil Co. of Louisiana quit its No. 1-A Schwing, the deepest test on this dome, which was drilled to a total depth of 6,007 feet.

Clay Creek Extension

Sun Oil Co. extended production a half mile north and opened a new producing horizon at Clay Creek (Gay Hill), Washington County, by its No. 5 Clay. Although at a total depth of only 1,746 feet, it is the deepest well in the field, other production having been around 1,200 feet. This well came in flowing 850 bbls. of pipe line oil daily, 430 pounds pressure on a half-inch choke, with 43 feet of 4¾-inch screen in the hole. Since completion, however, the well has gone 70 per cent to water.

Second Manvel Test

Location for the second test on the Manvel geophysical salt dome prospect, northern Brazoria County, was made by The Texas Company late in the week. The first test, No. 1 Ewing, was abandoned several weeks ago in heaving shale at 7,648 feet.

The new test, No. 1 Belcher, 167 feet SE of the NW line and 223 feet NE of the SW line of Lot 18, Block A, Suburban Gardens Subdivision, is approximately 2,600 feet southeast of the Ewing test.

Manvel is looked upon as one of the most favorable prospects on the Gulf Coast, especially since showing encountered in the first test, which blew in from a sand at 7,590 feet as a 50,000,000-foot gasser, 1,500 pounds pressure, showing a slight spray of oil and water. The well, however, failed to hold up and was deepened to 7,648 feet.

Black Bayou Abandonment

Shell Petroleum Corp. has abandoned temporarily its attempt to drill through salt in its No. 2 State, Black Bayou, Cameron Parish, Louisiana. Development of prolific production underlying a salt "overhang" at Barbers Hill, together with the proving of cap rock and salt protrusions around other domes, led Shell to attempt to determine the possibilities at Black Bayou.

This test topped salt at 4,207 feet and drilled in this to 6,460 feet without break, a total of 2,253 feet. Although a few tests have gone deeper than that in salt, that is an unusually large amount.

Estimated daily average production of Coastal fields for the week ended April 25 was:

TEXAS COAST

Allen	16
Barbers Hill	30,014
Batson	479
Big Creek	3,244
Blue Ridge	1,135
Brenham	37
Boling	764
Clay Creek	2,046
Damon	1,135
DeWalt	11,663
Esperson	2,304
Fannett	483
Goose Creek	4,189
Hankamer	2,470
High Island	515
Hull	6,654
Humble	10,586
Lost Lake	293
Markham	173
Moss Bluff	608
Mykawa	227
Nash	197
North Dayton	673
Orange	1,982
Orchard	1,799
Pierce Junction	9,215
Port Neches	1,435
Raccoon Bend	12,484
Refugio	32,464
Rockland	8
Saratoga	1,060
Sour Lake	2,016
South Liberty	2,210
Spindletop	10,235
West Columbia	4,228
Total Texas Coast	159,039
Week ended April 18	152,367
Increase	6,672

LOUISIANA COAST

Anse La Butte	71
Bayou Blue	65
Bayou Bouillon	132
Black Bayou	1,584
Edgerly	399
Jennings	789
Hackberry	2,746
Lake Barre	2,460
Lake Pelto	117
Lockport	6,330
Port Barre	1,878
Sorrento	596
Starks	766
Sulphur	1,773
Sweet Lake	787
Vinton	5,551
White Castle	988
Total Louisiana Coast	27,332
Week ended April 18	26,331
Increase	1,001
Total Gulf Coast	186,371
Week ended April 18	178,698
Increase	7,673

Lockport Area Extended

Production in the recently opened northwest extension district of the Lockport area was extended approximately 400 feet to the south with the completion of Union Sulphur Co.'s No. 2 Martha Moss, flowing 2,500 bbls. daily pipe line oil, 1,175 pounds pressure, through a three-eighths-inch choke from sand at 6,519-29 feet. One joint of 4¾-inch screen was set. The well later was placed on a quarter-inch choke and flow pinched to 1,300 bbls. daily.

The well, according to indications so far, is the best of the three producers which have been completed in this particular area, all of which are from this deep horizon. Union's well is directly

(Continued on Page 87)

GULF COAST FIELDS AND WILDCATS

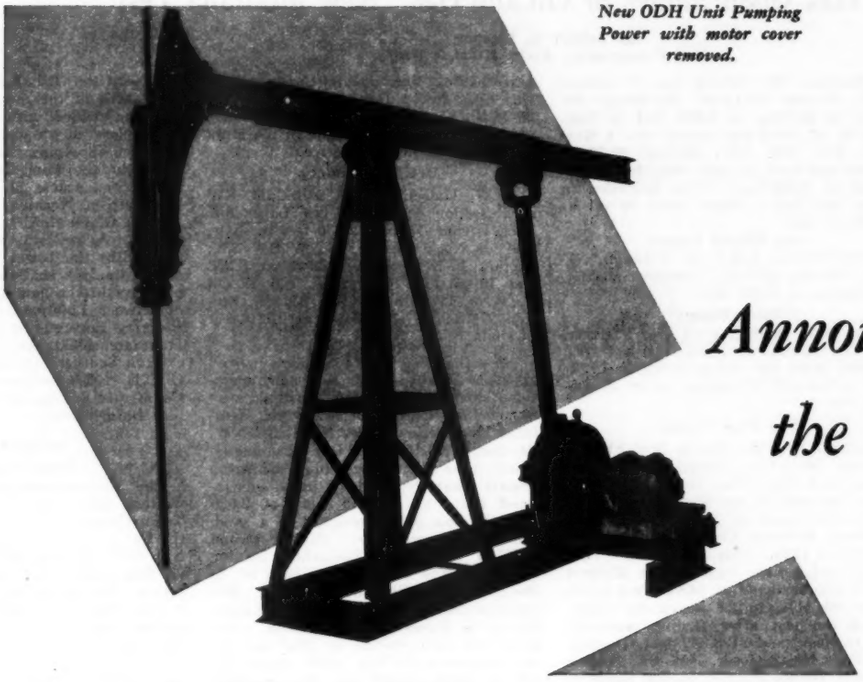
Week Ended April 25

All Rotary

BARBERS HILL—CHAMBERS COUNTY

Gulf Production Co.'s No. 1 Wilburn (D.D.), Henry Griffith League, 50 ft. S of C of N line of tract	Coring sandy shale 5,259 ft.
Humphreys Corp.'s No. 2 Wilburn, southeast	Set 233 ft. screen 5,234 ft.; swabbing.
Humphreys Corp.'s No. 1 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from S line and 75 ft. from W line of tract	Drlg. sand and lime 5,614 ft.
Humphreys Corp.'s No. 2 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from W line and 478 ft. S line 10-acre tract	Drlg. shale 5,329 ft.
Humphreys Corp.'s No. 3 E. H. Winfree, west flank, W. D. Smith Sur., 264 ft. from S line and 50 ft. from W line of 10-acre tract	Oil sand 5,376 ft.; cmtd. 7-in. csg.
Humphreys Corp.'s No. 4 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from W line and 617 ft. from S line 10-acre tract	Drlg. sand, lime and shale 4,780 ft.
Humphreys Corp.'s No. 5 E. H. Winfree, W. D. Smith Sur., 854 ft. from S line and 50 ft. from W line	Drlg. gumbo 847 ft.
Humphreys Corp.'s No. 1 Anna Davis, Henry Griffith League, 475 ft. from N line and 71 ft. from E line of Strip 6	Rigging up.
Humphreys Corp.'s No. 2 T. S. Fitzgerald, Henry Griffith League, 300 ft. from N line, 65 ft. from E line of tract	Derrick.
Mills Bennett Production Co.'s No. 1 Gulf-Fisher (workover), Wm. Bloodgood Sur., 50 ft. from SW line and 250 ft. from SE line tract	Drlg. shale and lime 5,049 ft.
Mills Bennett Production Co.'s No. 4 Gulf-Fisher, Wm. Bloodgood Sur., 300 ft. from W line, 80 ft. from N line tract	Derrick.
Mills Bennett Production Co.'s No. 1 Gulf-Smith (workover), W. D. Smith Sur., 50 ft. from S line and 50 ft. from E line tract	Drlg. sand and shale showing oil 5,565 ft.
Rio Bravo Oil Co.'s No. 2 Fisher, west flank	Drlg. rock 4,477 ft.
Sinclair Oil & Gas Co.'s No. 3 Smith, W. D. Smith Sur., 50 ft. out of S cor. of tract	Drlg. shale, lime and boulders 3,312 ft.
Sun Oil Co.'s No. 2 Smith, W. D. Smith Sur., 75 ft. from W line, 50 ft. from N line of tract	Drlg. shale and lime 2,519 ft.
Sun Oil Co.'s No. 3 Winfree, W. D. Smith Sur., 450 ft. SE along SW line from NW cor. of tract and 50 ft. NE at right angles	Gumbo 1,824 ft.; cmtd. 10-in. csg.
Sun Oil Co.'s No. 14 Wilburn fee, east	Sand and shale 4,162 ft.; drill stem stuck.
The Texas Company's No. 2 Winfree, west flank, W. D. Smith Sur., 264 ft. N, 50 ft. W at right angles out of SE cor. of lease	Drlg. hard sand and lime 4,707 ft.
The Texas Company's No. 3 Winfree, west flank, W. D. Smith Sur., 478 ft. N and 50 ft. W at right angles	Drlg. hard shale and lime rock 5,140 ft.
The Texas Company's No. 5 Wilburn, east flank, Wm. Hodges Sur., 400 ft. SW of No. 4 Wilburn and 50 ft. from SE line of lease	Fishing bit 1,294 ft.
The Texas Company's No. 4 Wilburn (D.D.), Henry Griffith League, approximately 1,700 ft. from W line and 50 ft. from S line of tract	Pulling liner 5,292 ft.
Yount Lee Oil Co.'s No. 10 Woodward, southeast	Total depth 6,484 ft.; set 5⅛ jts. screen 5,438 ft.; tested salt water; abandoned.
Yount Lee Oil Co.'s No. 15 Chambers (D.D.), Wm. Bloodgood Sur., 50 ft. from E line and 355 ft. from N line tract	Set 85 ft. screen 4,709 ft.; to pump.

(Continued on Page 83)



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TUNE IN THE WESTINGHOUSE PROGRAM OVER KDKA, KYW, WBZ AND ASSOCIATED N. B. C. STATIONS SUNDAY EVENINGS.

Resume Drilling on Greasewood Dome

High Gravity Show in Larimer County, Colorado. Badger Basin Wildcat Has Good Shows of Oil and Gas. New Montana Test

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 27.—The number of active drilling wells in Lea County, New Mexico, was down to four this week. Potential production for Hobbs on April 16 was set at 1,150,512 bbls., an increase of 27,547 bbls., and allowable outlet for the last half of April was placed at 32,506 bbls. daily.

One well was abandoned and two new operations were reported getting under way in Utah.

In Montana, the California Co. will make another test of the Bynum-Pendroy area in Teton County, west of the wells which had good shows several years ago. The B. & O. Oil Co.'s No. 1 Haines, in the Cut Bank area, had only a good show instead of the large well reported in press dispatches. One well was abandoned in the Kremlin district in Hill County and one new operation was reported in the Pondera Field.

In Colorado, the Reiter-Foster Oil Co. has let drilling contract for its first well on the Greasewood Dome. A good show of high gravity oil was reported in C. Leonard Smith's shallow test to the Pennsylvanian formation in Larimer County. The Midwest Refining Co. has abandoned its Bell Rock test in Moffat County and will drill another.

The Midway Dome test in Wyoming is through the Lakota and on its way to the Sundance. The Resolute Oil Co.'s wildcat on the Badger Basin Dome in Park County, has reached the second Wall Creek at 8,459 feet with good shows of oil and gas. One completion was reported in the Osage Field.

NEW MEXICO

Lea County

The potential production of the Hobbs Pool for proration purposes for the last half of April was placed at 1,150,512 bbls. daily, an increase of 27,547 bbls. over the average potential for the last half of March and the first half of April. The allowable outlet was set at 32,506 bbls. daily, practically the same as in the two preceding smimonthly periods. The total number of wells on April 16 was 142 on 126 units of 40 acres each, the same as in the schedule issued a month ago. Gypsy Oil Co.'s No. 7 Grimes, the only well completed in the field the past month, was shut in after making a company test.

There were only four drilling wells reported active in Lea County the past week. Midwest Refining Co.'s No. 26 Capps, C SE SW, Section 3-19-38, the only well drilling in the Hobbs Pool, is drilling at 1,595 feet in red rock and sand. Leonard and Levers' No. 1 Justis, C SE NE Section 19-25-37, in the Jal area, is shut down at 870 feet in red rock waiting for cement to set after cementing the 10-inch on bottom. The other two operations are in the Caprock area, Culberson & Conrad's No. 1 State, C NE, Section 22-18-34, is building rig and moving in rotary, and Western Drilling Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, is cleaning out to test. The last named, after running into sulphur water at 5,040-45 feet, plugged back and shot the upper pay at 4,680-4,750 feet. It headed for five minutes after the shot and the gas increased to approximately 500,000 feet a day. It is not yet known what the well will do in the way of oil production.

Warman Oil Trust's No. 1 Seibert, NE, Section 27-13-24, Blackdom district, is drilling at 2,630 feet in lime, and R. T. Neal and others' No. 1 Russell, SW NW NW, Section 21-14-25, Hagerman area, is shut down for rig repairs at 2,223 feet. It is bottomed in sand and had a slight show of oil at 2,122-44 feet.

San Miguel County

Star Oil Co., Ltd.'s No. 3 Adams, NE cor., Section 25-17-17, Dunken district, is drilling at 3,505 feet.

Eddy County

Oil Well Drilling Co.'s No. 1 Baker, NE NE, Section 21-21-26, Carlsbad area, is shut down for casing at 885 feet. It had a hole full of sulphur water at 690-700 feet.

San Juan County

Reserve Oil Co.'s No. 3, NW SE SE, Section 36-22-14w, Stoney Butte structure, is drilling close to 800 feet and near the sand in the Mesa Verde which was encountered at 775-91 feet in the Midwest Refining Co.'s No. 22, drilled nearby in 1928. This sand made 6 bbls. of oil and a little water. The Midwest found another sand at 840-70 feet which made 30 bbls. in 24 hours, but abandoned the test after finding water in the Hospah sand at 3,032 feet. Dorothy Oil Co.'s No. 2 Goede, NW SE, Section 29-30-9, Blanco district, is shut down at 1,750 feet, and H. L. Williams' No. 1 Stallings, NW SW, Section 17-25-15w, Rio Chaco district, is rigged and ready to spud. San Juan Leaseholds Co.'s No. 3 Bowman, NW NE, Section 30-30-15, Meadows district, is shut down temporarily in sand at 2,685 feet waiting for new drilling line. Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, Kutz Canon district, is drilling at 2,440 feet with the sands in the Mesa Verde as the next objective.

McKinley County

J. W. Halsell's No. 1 Fairchild, SW cor., Section 4-18-9w, Seven Lakes district, is shut down at 2,050 feet in shale, and his No. 1 Santa Fe, NW SW SW, Section 17-18-9, is shut down at 3,253 feet in shale. San Juan Coal & Oil Co.'s No. 1 Santa Fe, NW SE SE, Section 27-18-9, is shut down at 2,110 feet in shale.

UTAH

One well abandoned, two new operations started and one well drilling were reported in Utah the past week. Escalante Exploration, Inc.'s No. 1, SE NW, Section 17-43-15w, on the Bloomington Dome, near St. George, in Washington County, was reported to have encountered water at a total depth of 2,526 feet, the hole being bottomed in a sand. The same interests will drill a second well in its No. 2 Escalante, Section 19-43-15. The contract has been let to the Diamond Drill Contracting Co. The location for the second test was made by L. Z. Johnson of California. The first well was started in 1927 by the Mid-American Oil Co. with rotary bit and at around 1,900 feet the operation was standardized. The first well had several shows of oil and gas and probably tested the Pennsylvanian formation.

The Western Petroleum Drilling Co. has commenced spudding in its No. 1 Henry Meeker in Salt Lake County near the Salt Lake City limits 1 mile west of the Utah Oil Refining Co.'s plant and north of the municipal airport. It is being drilled with rotary equipment. It is close to an old water well which has been supplying gas for domestic purposes in the immediate vicinity for a number of years. J. J. Van Leeuwen Boomkap of Nogales, Ariz., is president and C. G. Dunford of Los Angeles secretary. A well was started in the city in 1928 by the Tower Petroleum Co., but went to only a shallow depth. The first objective of the new operation is a sand at between 1,000 and 2,000 feet expected to carry gas and the second is expected at around 4,000 feet.

Utah Southern Oil Co.'s No. 1 Balsey, C NE NE, Section 31-23-21, Grand County, is drilling at 2,206 feet in salt in a 10-inch hole.

MONTANA

Teton County

The Bynum-Pendroy district on the western side of the Sweetgrass Arch in Teton County is to have another test in the California Co.'s No. 1 Sullivan, NW NE NW, Section 34-27-7w, for which rig and equipment is being moved to location. This operation was spotted about 8 miles west and a little north of a test drilled several years ago by the Midwest Refining Co. in its No. 1 Scott, SE cor. NE, Section 2-26-6w, and 10 miles west and a little south of L. B. O'Neill's No. 1 Jones, NE cor. SE, Section 24-27-6w. The Midwest well had a show for 10 or 12 bbls. of oil at 2,468 feet and the O'Neill well showed about the same at a total depth of 2,604 feet, neither being considered commercial. There have been no wells drilled between the new location and the wells to the east. The California Co. is reported to have a block of 40,000 acres surrounding its well. This district is west of the Pondera Field.

Glacier County

An Associated Press report of a 2,000-bbl. well in the B. & H. Oil Co.'s No. 1 Haines, C SE SE, Section 2-34-6w, Cut Bank district, referred to and discounted in this column last week, appears to have been little better than a good show. Two months ago this well topped a sand, supposedly the Sunburst, at 2,762 feet, but was hindered from drilling in by bad casing. It had a small show of oil. It finally succeeded in swedging the 8¼-inch sufficiently to let a string of 5-⅞-inch pass and after landing it on top of the sand the hole was drilled to 2,781 feet. It was swabbed four days and swabbed dry, there being 5 feet of mud, water and oil in the 250-bbl. tank. No gas was reported showing. The well is about three-fourths mile southwest of Jerome Drumheller's No. 1 Yunck, C SE NW, Section 1-34-6, which last year was completed as a 7,000,000-foot gas well at 2,840 feet.

Fulton Petroleum Co.'s No. 1 Blackfoot, SW NE NE, Section 28-36-12w, Milk River district, is drilling at 1,350 feet after sidetracking lost bit. This operation, which is using a Diesel engine for power, topped the Eagle at 1,095 feet and has the Ellis-Madison contact at 4,500 feet as its objective. It has had considerable trouble with the hole going crooked.

Carbon County

Joe D. Cook, Mark U. Weber, Charles E. Orchard and associates, who recently took over the Beartooth holdings on the Dry Creek Dome, have incorporated the Carbon Oil & Gas Co. and their No. 1 Armstrong, SW cor. NW, Section 7-7s-21, will hereafter be carried in that name. It is drilling at 854 feet. The 15½-inch was cemented at 765 feet. Harry P. Hynds of Cheyenne is interested in

INTEREST SHIFTS TO BORDER AREA IN ALBERTA FIELD DEVELOPMENT

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 25.—In Alberta interest is shifting to the border areas, where several important tests are under way. Some 45 miles east of Coutts, Mayland Southern's No. 1, LSD 13, Section 4-1-9w4, has encountered a small flow of gas at 310 feet, and is deepening to 400 feet before setting casing. Water shut-off was previously made at 200 feet. The gas flow is more than sufficient to supply fuel for drilling. The location is immediately north of the international boundary, and about 4 miles north of a pipe line to Great Falls. The flow was encountered in the Milk River sand. Some water was also found in the sand, but not enough to shut off the gas. A mile east of Mayland Southern's No. 1, W. J. O'Haire of Sunburst is hauling material for No. 1 test of a Minneapolis group to be drilled in SW, Section 10-1-9w4.

Spring Coulee Test

On the Spring Coulee structure, Alberta Pacific Consolidated Oils' No. 1, Section 15-4-23w4, is finishing a production test of the oil horizon encountered in a lime formation at 5,935 feet. Samples taken indicated a high gravity crude, but only government officials and officers of Alberta Pacific and Frontier Development companies, which are jointly interested in the test, have been admitted to the well and no statement has been made as to probable production. It is understood if the well fails to develop commercial production at this horizon it will be drilled deeper.

In the Taber district, Alberta Pacific's No. 1 Cole-English, LSD 3, Section 11-10-17w4, is making new hole below 3,320 feet after drilling out cement. The well was cemented in the top of an oil sand and drilling will be continued a short distance into this sand, after which a production test will be made. Majestic Mine interests are reported to be starting another structure test on their acreage near Taber.

On the Montana side, the B. & H. well just south of Cardston and 6 miles north of Cutbank is reported to have drilled into an oil sand at 2,765 feet, continuing to 2,780 feet with oil seeping into the hole. In the Sweetgrass Hills area, Northland Oil Co.'s wildcat in Liberty County is reported testing an oil sand encountered 770 feet in the Madison lime at 3,471 feet.

Red Coulee Field

On the Alberta end of the Red Coulee structure, Vanalta Oils' No. 4, Section 4-1-16w4, is reported making between 60 and 70 bbls. settled production.

On the Montana end, Askalta Oils, Ltd., whose No. 1 Vollbrecht, SE, Section 11-37-4w, was recently abandoned at 2,460 feet, is reported arranging to drill No. 2 on acreage of the Mid-Continent Oil & Refining Co. of Calgary,

(Continued on Page 87)

the company. The location is just east of the Ohio Oil Co.'s discovery well. It is being drilled with a rotary.

The Ohio Oil Co.'s No. 1 Montana Industrial, SE SW NE, Section 11-7s-21, an offset on the north to its discovery well in the Dakota, which is expected to be the next completion on that dome, is drilling at 4,705 feet with about 700 feet to go. Same company's No. 1 Souders, C SW SW, Section 2-7-21, is drilling at 1,550 feet after changing over to rotary.

Toole County

Ashalta Oil Co.'s No. 1 Volbrecht, NE cor. SE, Section 11-37-4w, Border Field, which was reported dry recently at 2,690 feet after going through the Vanalt, Sunburst and Cosmos sands, will make an attempt to shut off water and shoot a showing in an effort to make it a commercial well. Liquid Gold Oil Co.'s No. 1 Roberts, C NW NE, Section 25-36-1e, Barthelote district, has rebuilt rig recently destroyed by fire and will try to recover the tools and make a test. It is showing about 1,000,000 feet of gas at a total depth of 2,110 feet. A-1 Petroleum Co.'s No. 1 Barthelote, SW SE NE, Section 24-36-1e, is preparing to resume at 1,585 feet.

Liberty County

G. G. Howard's No. 1 Schoonover, SW NW, Section 18-36-6e, Bear's Den district, spudded on April 1, but has made little progress due to a quicksand cave at 100 feet. The Northland Oil & Gas Co.'s No. 1 Yurman, C SE SW, Section 32-33-5e, is running casing for a formation shut-off preparatory to testing a showing at 3,471 feet.

Hill County

Jones & Perkins' No. 1 Carruth, SW SE SW, Section 34-33-12e, Kremlin district, was abandoned in water at a total depth of 1,160 feet. It had an uncommercial gas show at 1,005-20 feet.

Pondera County

American Oriental Oil & Gas Co.'s No. 3 State, NW SE SE, Section 16-27-4w, Pondera Field, is spudding at 150 feet. It is one location northwest of its No. 2 State, a 15-bbl. well at 2,008-10 feet.

Choteau County

Coolidge & Coolidge's No. 1 Lehfelt, C NW SE, Section 32-26-17, Sherard Dome, is rigging up to resume. It spudded to 50 feet and shut down some time ago. It is the first of six wells to be drilled to develop a gas supply for the Public Service Gas Co.'s line to Great Falls.

Rosebud County

Prairie Oil & Gas Co.'s No. 1-X, Contract 3, NE SW NW, Section 26-10n-39, Porcupine Dome, is bottomed at 2,415 feet and waiting for new slips.

COLORADO

Weld County

The Reiter-Foster Oil Co. has let the contract to Manning & Terry, Inc., for the drilling of the wells on the Greasewood Dome in Weld County under the joint operating agreement signed by that company and the Platte Valley Petroleum Co. on April 10, and cellar has been completed for the first well on the Ida Johnson tract in the C NE NW, Section 24-6n-61, just to the north of No. 1 Patterson, the discovery well. The agreement between the companies inaugurates the first drilling program undertaken on the Greasewood Dome since the discovery well came in last October and is expected to have a far-reaching effect on operations not only in that district but in the eastern Colorado area where more than 1,000,000 acres of land is under lease. The agreement gives the Reiter-Foster company optional drilling rights on four wells on as many separate tracts in addition to the first well on the Ida Johnson tract. The tentative locations for these wells are as follows: No. 1 Juhl, C NE SE, Section 14-6n-61; No. 1 Wilson, C NW SW, Section 19-6n-60; No. 1 W. A. Wilson, C NW NE, Section 30-6n-60, and No. 1 W. A. Wilson, C NE NW, Section 29-6n-60.

The first well on the Ida Johnson tract, which is to be drilled at once, is to be drilled to 7,250 feet unless oil or gas in commercial quantities is found at a lesser depth. The agreement designates that a commercial well is one that encounters a saturated sand of at least 40 feet thickness and produces an average of 500 bbls. a day over a period of 30 days, or 3,000,000 feet of gas per day under the same conditions. If and when commercial production as defined is found in the first well, the Platte Valley company agrees to assign to Reiter-Foster a one-half interest in the entire tract. Reiter-Foster is to pay all drilling expenses, but will be reimbursed to the extent of 50 per cent out of production. Upon completion of the well, Reiter-Foster then has the option to drill the additional four wells under the same terms and conditions, receiving a half interest in each tract upon the completion of a commercial well upon that particular tract.

The Reiter-Foster company has a call on the oil and gas production from the Platte Valley holdings in Sections 13-24 and 25-6n-61 and Sections 18, 19 and 30-6n-60, with the exception of the Patterson well which is under contract to the Continental Oil Co. This feature of the contract is of special interest as the company is affiliated with the Eastern Colorado Gas Co., which has franchises for natural gas in a number of towns in that part of the State and which, in the event large quantities of gas are developed, has the supplying of industrial plants in and around Denver as a possible objective. While no official information has been given out, it is believed the Reiter-Foster company has some definite plans in regard to a refinery should the new field come up to expectations.

Larimer County

A show of high gravity oil and gas in C. Leonard Smith's No. 1 State, SE cor., Section 36-12n-70, Sand Creek Dome, in Larimer County, to the northwest of the Wellington-Fort Collins Domes, may prove of considerable importance. The well was started last summer as a test of the Pennsylvanian formation and it was estimated it would go to around 1,500 feet. The Pennsylvanian has never been drilled to any extent in northern or northwestern Colorado, though its possibilities were considerably enhanced with several discoveries in that formation in southern Wyoming within the past few years. No. 1 State starts in the Sundance, the Dakotas having been eroded. The surface formation was hard and difficult to drill and three holes were lost. The present test is the fourth hole. It had considerable water at 135 feet. It is at present bottomed at 720 feet in the top of a sand believed to be in the Tensleep where it encountered the show of oil and gas. Just as it entered the sand, the water from the 135-foot horizon again broke in from behind the 6¼-inch casing and for an hour water, oil and gas flowed over the top. Samples of the fluid taken in a small container showed oil on top to about the thickness of a lead pencil. The oil is light and of about 50° gravity. A string of 4½-inch pipe is being lowered to the top of the sand and will be cemented and a complete water shut-off secured before any further test of the showing is made.

Standard Oil Co. of Colorado's No. 1 Wilson, NW cor. SW, Section 21-4n-69, Berthoud Dome, is shut down at 1,220 feet for boiler repairs. Its No. 1 Hall, NE cor., Section 20-4-69, which recently was completed as a gas well at 800 feet, has been connected up with the Colorado-Wyoming Gas Co.'s line.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, near Aurora, is still fishing for bit at a total depth of 5,800 feet. An impression taken indicated it was tilted but slightly and it is expected it will be recovered within a few days.

Adams County

Nettie M. Statt's No. 1 Hills, SE cor., Section 27-3s-64, Watkins district, is bottomed at 3,000 feet, cleaning out 60 feet off bottom and lowering 8⅝-inch to stop caving.

Lincoln County

Eastern Colorado Oil Corp.'s No. 1 State, SE NW, Section 36-14-57, formerly Kelly Oil Co., is underreaming 4½-inch to lower it from 2,450 feet to bottom at 3,380 feet.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Denver, is drilling at 3,893 feet in sandy shale with a slight show of oil and gas.

Huerfano County

Parker Club, Inc.'s No. 1 Fee, Section 4-28-68, Badito-Alamo structure, has redrilled to the top of the Lakota at 4,115 feet and is preparing to run and cement 5⅞-inch pipe. At this depth the hole had a good show of oil through 3,000 feet of water after going through a 15-foot cap rock more than a year ago. The casing parted and a tedious sidetracking job has just been finished. The hole will be dried up and the sand tested. Midland Petroleum Co.'s No. 1 Campbell, NE SE, Section 4-29-69, Oak View, which has been idle since last fall, is preparing to resume at 500 feet.

Park County

South Park Oil & Gas Co.'s No. 1 Milligan, NE SE, Section 13-8s-76, Jefferson area, is drilling at 1,873 feet in lime and carrying 8¼-inch at 1,850 feet.

Moffat County

Midwest Refining Co.'s No. 24 Hannewalt, NE SE SE, Section 4-6n-92, Bell Rock Dome, the discovery well which came in a year ago gauging 32,000,000 feet in a sand in the Mesa Verde formation at a total depth of 2,867 feet, has been abandoned. It was drilled to 3,040 feet where it tested 35,000,000 feet, but had considerable trouble with water. After several fishing and numerous cementing jobs, the well finally was completed a few weeks ago. However, the gas failed to come back in anything like the original quantities after being allowed to blow and it was decided to abandon it and drill another well. It failed to reach the objective Morapas sandstone by close to 200 feet.

Mountain Fuel Supply Co.'s No. 2 State, SE NE, Tract 37-12n-100, Hiawatha Dome, is drilling at 2,216 feet in the Tertiary and making 14,000,000 feet of gas.

WYOMING

Natrona County

Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, Midway Dome, the deep test being drilled under a co-operative agreement with the Salt Creek Producers Association, the Mountain Producers Corp. and the Midway-Geary Syndicate, was bottomed at 6,150 feet at last report and is believed to have gone through the Lakota sand and to be in the top of the Morrison formation. Drilling is continuing with the Sundance as the next objective. The Dakota, topped at 5,967 feet, showed 12 feet of saturation, followed by a white water sand.

Cuyler Oil Co.'s No. 1 Heery, SE, Section 23-36-85, Powder River, is waiting at 1,250 feet after cementing the 10-inch on bottom.

Park County

Resolute Oil Co.'s No. 1, NE SW NE, Section 17-57-101, Badger Basin, the deepest well in the Rocky Mountain area, was reported the past week to have reached the top of the second Wall Creek sand in the Frontier formation at 8,459 feet. More oil and gas was reported showing, the oil standing approximately 5,000 feet in the hole. The best reports available indicate it is not yet considered a commercial producer and the results will be in doubt until it is drilled into the sand. A control head will be installed before additional drilling takes place. The well cut 14 feet of first Wall Creek at 8,245 feet and made approximately 1,000,000 feet of gas per day and a small quantity of 45° gravity oil. The bit was lost and after it was sidetracked and cemented into the wall drilling was resumed in a 3½-inch hole. The bailer then was lost and recovered. This is the pioneer well on the dome.

Big Horn County

Ohio Oil Co.'s No. 1 Smith, Lot 61, Section 33-56-97, Garland Dome, is bottomed at 1,274 feet and redrilling at 1,178 feet. Utah Southern Oil Co.'s No. 3 Government, NE cor. SW, Section 29-56-97, is rigging up rotary to deepen 500 feet into the Madison lime from 3,763 feet. The well started in the SE NE SE, Section 29-56-97, last January by S. C. Fertig and others, and drilled to 900 feet, is preparing to resume. Mr. Fertig has withdrawn from the syndicate and C. R. Griffith, trustee, is reported in charge. Contract has been let to Paul Stock who is moving in rotary equipment. The location is half a mile north of the Ohio Oil Co.'s No. 1 Easton, the oil discovery well in the Madison lime, and is on an 80-acre tract owned by the Montana-Wyoming Oil Co.

Washakie County

Ohio Oil Co.'s No. 1 Strothers, SE NW, Section 19-45-92, Neiber Dome, is

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SOUTHWESTERN GAS MEASUREMENT SHORT COURSE IS A BIG SUCCESS

By L. G. E. Bignell
Petroleum Engineering Editor

The eighth Southwestern Gas Measurement Short Course, held at the University of Oklahoma, Norman, Okla., from April 21 to 23 inclusive, was attended by about 364 persons who represented 22 states in this country.

This course, like its predecessors, was divided into sessions where general subjects were discussed and other meetings where class work on special subjects was conducted by members of the faculty of the College of Engineering and gas company employes; and classes on the several types of equipment, conducted by representatives of the equipment manufacturers.

In the absence of Doctor Bizzell, J. H. Felgar, dean of the College of Engineering of the University of Oklahoma presided at the opening session and presented the address of welcome, after being introduced to the assembly by E. F. McKay, manager of the Oklahoma Utilities Association. Dean Felgar also gave a paper at this opening meeting on "College of Engineering and the Gas Measurement Short Course" that outlined quite fully the work of this body.

During the morning session of April 21, E. J. Stephany, secretary of the Natural Gas Department of the American Gas Association, delivered a paper on the history and development of the natural gas industry in this country which he stated had its inception about 109 years ago. Its growth in the past few years has been phenomenal as witnessed by the fact that in the past nine years more gas has been handled in the systems of this country than in the whole of the preceding 100 years. The Mid-Continent and the southwestern section of this country now lead in the production of natural gas, while prior to 1917 West Virginia, Pennsylvania and Ohio produced about two-thirds of all the gas used in the United States. Today Oklahoma, Texas and Louisiana produce about 50 per cent of the natural gas.

In the early days no measurement of gas was made and it was all sold on a flat rate. Later it was measured at the consumer's burner, but now every cubic foot of gas is measured at least four times between well and consumption. It is first measured as produced at the well, then while in transportation and when it reaches the town border it is again passed through meters and has a final measurement in the gas meters at the consumer's property.

This practice of measuring gas so many times is the fundamental reason for the need of this course in gas measurement and that it is justified is made evident by the annual attendance and the distance traveled by the men in order to reach Norman to take the course.

The course covers the measurement of gas at high and low pressures and in large and small quantities. While other

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Wildcatters Active in Southwest Texas

Bulk of Drilling at This Time Consists of Tests for New Producing Areas. Starting Test in Southern Bexar County

By B. D. Stevenson
Staff Correspondent Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 27.—Completions and new locations were about a standoff in Southwest Texas last week, but with an increase in the number of important new deals that rank as a little more important than the average wildcat proposition. Also there have been some showings and some early indications of logs running high that may later be overcome by thickening of formations or made better by thinning formations before they reach pay levels.

In Medina County, 3 miles west of the Ina Field where Sunflower drilled a well last year and got a little production in shallow formation it is drilling now No. 1 L. Mofield which at 1,610 feet probably has the top of the Eagleford compared with Kirby Oil Co.'s No. 1 Fusselman, 5 miles north, that got the top of the Eagleford at 1,660 feet. The dip is toward the south at around 100 feet to the mile and if the identification of formations is right No. 1 Mofield, which is headed for the Edwards lime, has everything in its favor so far. Elevation of Kirby's No. 1 Fusselman is 798 feet and Sunflower's No. 1 Mofield 762 feet which still leaves the latter well quite high.

In northwestern Guadalupe County, C. McGarrity is drilling a test midway between two tests drilled by Jones and Erwin and it seems to be running about 50 feet high according to the interpretations of the owners of the well. The surface and for some little depth was drilled with an earth augur that brought the formation out of the ground and the Taylor marl was saturated with oil. When let stand 10 hours about half a barrel was bailed out. Top of chalk is carried at 240 feet and elevation 655 feet. This test will set 8-inch casing on top of the Edwards. It was intended to be a Trinity test but seems to stand some chance of getting production in the Edwards.

Wildcats Being Watched

The great bulk of the drilling in Southwest Texas at this time is wildcat operations exploring for oil. There are a few tests in Pettus, a few in the Escobas Pool and one or two tests in each of several other pools but the bulk of the work is exploration. Quite a few of the tests are of more than ordinary interest.

In Victoria County, south of the town of Victoria, both Slick's No. 1 McFadden and Simpson-Fell's No. 1 Levi have spudded in and are drilling, but four other tests northeast of the town of Victoria, due to start, have not been spudded.

In southern Bexar County, 10 miles south of San Antonio on a Humble Oil & Refining Co. block of leases, Camp and others are starting No. 1 Chevez in the Juan Montes Survey just east of the juncture of the Medina and San Antonio Rivers. It is in a very interesting territory, made interesting by some pioneer drilling by Allan Park and associates and later by T. B. Slick, Houston Oil Co. and others that indicate the presence of a fault. It is the first of two tests to be drilled on the block, the other to be started within a month. They will be Edwards lime tests. All that part of Bexar County is leased up by major interests with independents owning a sprinkling of leases.

There are several important new tests starting also in Bee County and some in Live Oak that promise to add at least considerable information to the territory where they are drilled. Southwest of the town of Pettus and the Pettus Field where Mauldin's No. 1 fee got a good showing of oil at the right depth for the regular sand and seemed to indicate an extension after some other tests had sort of condemned the idea of further extension, the Mauldin test is still waiting for casing. J. M. Davis and associates, however, have made location 330 feet from the north and east lines of the John W. Williamson Survey and about 2,500 feet west of the Mauldin test. Davis' test is a logical location and based on the Mauldin well getting oil, Davis ought to get it also. He will be spudded in within a few days at least.

During the week the United Production Co. got a producer in its No. 33 Ray, midway between the Pettus Townsite Pool on the west and the Ray-McKinney on the east and 700 feet south of No. 31 which came in some weeks ago, proving that the two pools are really one. No. 33 makes the field 700 feet wide at that point.

One new wildcat is to be started in Bee County, 6 miles west of Skidmore in the southern part of the county. It is Grebin & Woods' No. 1 Riggs in the James Nowland Survey and in a part of the county that has not been explored much in the past. The location is approximately 6 miles northeast of nearest production in the Cartwright Field in Live Oak County.

Laredo District

There were two producers completed in Southwest Texas during the week and both of them were in the Laredo district, one in the Carolina-Texas and one in the Escobas Pool. There were quite a number of abandonments over the territory. George S. Marshall drilled to 4,000 feet in his No. 3 Webster in Survey 684 in the Carolina-Texas Field in Webb County and plugged back and whipstocked and completed a 75-bbl. well at 2,630-55 feet. It is presumably the sand of Usher Carson's discovery oil well of the field at 2,609 feet, drilled some years ago. There have been only a few tests completed in that sand since. Marshall's is one of the best.

The other producer completed was O. & A. Co.'s No. 3 Garcia in Share 3 of the Comitas grant, a 100-bbl. well at 1,229 feet which is a little shallower than the average of that field where the completion depth usually is 1,300 feet.

The United Production Co.'s No. 33 Ray in the Pettus Field was a producer late in the week.

Dry Holes Completed

The most important abandonment of the week was probably the Houston Oil Co.'s No. 3 Wormser in northwestern Brooks County at 4,904 feet. Houston Oil discovered production on the Lasater Ranch and has completed one producer since but has had a number of disappointments and this is one of them.

An important test is starting farther south in the same county. Ike Howeth on Humble acreage is starting No. 1 Singer, 400 feet east of the Humble Oil & Refining Co.'s No. 1 Singer, which looked like some kind of a well at 2,340-50 feet. Howeth will try to pick up the sand and bring in a well. Humble drilled two tests much deeper on a high powered block of leases and had some pretty good showings farther down and lost the first well. The second was drilled on the strength of the showing in the first but failed to get it in commercial quantities.

Goliad County

T. B. Slick estate's third test in Goliad, 20 miles northeast of the Pettus Field, is a dry hole and abandoned at 4,431 feet. Where No. 1 Poetter, the discovery well, and No. 1 Allen, the second test drilled, each got production at 4,212 feet No. 1 Reidel got nothing but shale and several drill stem tests failed to get any production. It is 1,830 feet southwest of No. 1 Poetter and was located with the idea of getting down on the slope and away from the gas that was too plentiful in the first two wells to be desirable.

In the western extremity of Gonzales County, the second attempt of the Linden Petroleum Co. to get production in the Edwards failed. No. 1 Cowley has been abandoned at 4,731 feet after topping the Edwards at 4,709 feet. It had a slight showing of heavy oil as did also the No. 1 Hensley which is located about 3,000 feet southeast of it.

In southern McMullen County, Stanolind Oil & Gas Co. abandoned its No. 1 J. O. Massey at 4,041 feet but the territory has not been abandoned and it is understood another test will be started on the same block of leases.

Coast Country

Aransas Oil Co.'s No. 1 Welder in San Patricio County, reported last week as probably opening a new gas field, has not yet been completed. It had the sand at 3,653-63 feet but drilled to 3,698 feet

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SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Morgan Bros.' No. 2 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
Collins and Morris' No. 10 Halberdier, J. M. F. Perez Sur.	T. D. 410 ft.; drlg.
Boling & Michael's No. 1 Adams, Miguel Gortaris Sur.	T. D. 700 ft.; (W.O.).
W. S. Rogers et al's No. 1 L. Donnop, Juan Montes Sur.	T. D. 400 ft.; shut down.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, A. Floyd Sur.	T. D. 50 ft.; drlg.

EDDINGTON POOL—FALLS COUNTY

Eddington et al's No. 3 Llewellyn, George Allen Sur.	T. D. 610 ft.; drlg. shale.

DARST CREEK FIELD—GUADALUPE COUNTY

Magnolia Pet. Co.'s No. 8 M. T. Klein, 300 ft. SE of No. 1	T. D. 1,600 ft.; drlg.
W. R. Posey's No. 1 Knodle, J. R. Robinson Sur.	Location abnd.

CHAPMAN POOL—WILLIAMSON COUNTY

Chapman et al's No. 2 Lawrence, S. Miller Sur.	Derrick.
Ertel et al's No. 9 J. C. Abbott, 842 ft. from W and 150 ft. from S line of farm in S. Miller Sur.	T. D. 150 ft.; drlg.
Vitex Oil Co.'s No. 8 Kilgore, Simon Miller Sur.	T. D. 1,735 ft.; waiting on cement.

PETTUS AREA—BEE COUNTY

J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur.	T. D. 3,874 ft.; waiting on cement.
Gulf Coast Oil Co.'s No. 2 McKinney, 2,400 ft. to E and 150 ft. to S line of track	Rigging up.
United Prod. Co.'s No. 32 Ray, G. Habbermacher Sur.	T. D. 3,925 ft.; drlg.
United Prod. Co.'s No. 33 Ray	T. D. 3,898 ft.; topped sand; set csg.

SLICK POOL—GOLIAD COUNTY

Slick estate's No. 1 Riedel, W. C. Brown Sur., 1,320 ft. S of No. 1 Poetter	T. D. 4,431 ft.; abnd.; dry.

LASATER POOL—BROOKS COUNTY

Houston Oil Co.'s No. 3 Wormser, Maguella Sur.	T. D. 4,904 ft.; abnd.; dry.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 3 Dunning, M. B. Kilvin Sur.	Moving in rig.
Houston Oil Co.'s No. 4 B. L. and C. C.	T. D. 5,686 ft.; reaming.

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WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks:
Tom Draper's No. 1 A. W. Schwarz, 185 ft. E of center of W line	T. D. 568 ft.; drlg.
Pacific Oil & Gas Co.'s No. 1 Harris, G. Van Norman Sur.	T. D. 795 ft.; standing.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan	T. D. 720 ft.; drlg.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 970 ft.; fishing.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 574 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 275-ac. tract in Sur. No. 32	T. D. 1,025 ft.; resumed drlg.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94	T. D. 712 ft.; shut down.

BASTROP COUNTY

Turner-Whorton and Anderson's No. 1 Harris, Joshua Gray Sur.	T. D. 2,361 ft.; drlg.

BELL COUNTY

Hartman et al's No. 1 M. E. Reed, Nancy Roberts Sur.	T. D. 907 ft.; showing oil; shut down.
Mildon Oil Co.'s No. 1 J. K. Edds, Maziano Moreno Sur.	T. D. 519 ft.; drlg. shale.
O. O. Alford et al's No. 2 F. Spankell, W. Woodford Sur.	T. D. 500 ft.; shut down.

BROOKS COUNTY

Ike Howeth's No. 1 Singer, 400 ft. E of Humble's No. 1 Singer	Rigging up to test sand at 2,340-50 ft. that showed oil but not tested in Humble's No. 1 Singer.
The Texas Company's No. 1 Allen, San Antonita grant	T. D. 200 ft.; drlg.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles south Skidmore	T. D. 325 ft.; drlg.
Catlell & O'Neill's No. 1 Miller, Ronald Hotchkiss Sur.	T. D. 3,905 ft.; reaming.
Grebin & Woods' No. 1 Riggs, 4,800 ft. to E line, 200 ft. to N line of Jas. Nowland Sur., 6 miles W of Skidmore	Location.
Mauldin et al's No. 1 Kimball, 300 ft. S Grayburg's No. 1-A Kimball, S. Winship Sur.	T. D. 3,544 ft.; standing 200 ft. in oil; to put in coarse screen

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Pipe Line Construction News

May Change Teapot Dome Oil Carrier Into Gas Pipe Line

CASPER, Wyo., Apr. 25.—Plans for the conversion into a natural gas carrier of the oil pipe line constructed from Teapot Dome to Freeman, Mo., by the Sinclair Pipe Line Co. in 1924 are under consideration by the Stanolind Pipe Line Co., present owners of the line and the North Central Gas Co. The gas company is said to have surveyed for a natural gas pipe line from Wyoming to Nebraska and Missouri points and to have found such a line would nearly parallel the existing oil line.

The oil line is a combination 10 and 12-inch carrier with screwed joints. It was built to transport crude oil from Teapot Dome to the main line of the Sinclair Pipe Line Co. at Freeman, Mo., that main line extending northeast to Chicago and south through Oklahoma and Texas. This pipe line system now is owned by the Stanolind Pipe Line Co., a subsidiary of the Standard Oil Co. of Indiana.

Should decision be made to turn the oil line into a carrier of natural gas, it is expected the line would have to be taken up and all screwed joints welded. This would be one of the largest welding jobs awarded in recent years as each collar, probably, would be welded on both sides in order to make the line absolutely tight and leakproof. With such collars about 20 feet apart and the entire line from Teapot Dome to Freeman, Mo., about 720 miles long, it is easy to figure how many welds would be made.

Changes would have to be made in the pump stations also in transforming the pipe line into a natural gas carrier. Compressors would have to be installed. The matter of location of existing pump stations and whether these locations would be suitable for changing into natural gas compressor stations is another matter which engineers of the gas company would have to decide. Ordinarily compressor stations on natural gas lines are located further apart than are pump stations on oil lines.

It is said the source of natural gas supply for the line would be the Muskrat and Sand Draw Fields near this city.

PANHANDLE GAS LINE TO BOISE CITY, OKLA.

FORT WORTH, Tex., Apr. 27.—The Panhandle Power & Light Co., subsidiary of the Kansas City Light & Power Co., is planning to lay a 74-mile gas line from producing leases in Moore County, near the town of Dumas to Boise City, Cimarron County, Oklahoma. The pipe will be 6-inch size. The company is already serving several towns in the immediate area of Dumas with natural gas from its wells, and is branching out in the gas business to serve other towns in the Panhandle and southwestern Oklahoma.

LINE THROUGH LOS ANGELES

LOS ANGELES, Calif., Apr. 25.—Application of the Southern Fuel Co. for permission to run a 26-inch pipe line through Los Angeles under a 21-year franchise to convey natural gas from Kettleman Hills to the Long Beach plant of the Southern California Edison Co. was approved by the Public Utilities and Transportation Commission.

The commission recommended an annual charge of 15 cents per lineal foot for that part of the pipe line in Los Angeles. The application must be submitted to city council for final action.

PIPE FOR 265 MILES REPORTED ORDERED FOR NEW SINCLAIR LINE

By B. E. V. Luty

PITTSBURGH, Pa., Apr. 27.—Sinclair Consolidated Oil Co. has ordered 265 miles of 12¾-inch seamless line pipe, about 35,000 tons, from Jones & Laughlin Steel Corp., for an oil line from Texas into Oklahoma, the line that was being talked about a couple months ago and was then held up. This is the first good sized order for line pipe noted since the report of four weeks ago. Meanwhile there have been various small orders. Several additional large projects have come out in the last couple weeks but there is never any definite idea whether a project will result in an order promptly or will be long delayed. There is a remarkably large amount of business more or less in the pending stage.

The Sinclair-Texas Pipe Line Co. in Tulsa stated the company was preparing to construct a pipe line from East Texas to Mexia, Tex., to connect with the system of the Prairie Pipe Line Co. but that it was not contemplated at this time to build a line into Oklahoma. The distance from East Texas to Mexia is approximately 90 miles. Weight of 12¾-inch pipe is about 50 pounds to the foot which makes the mileage shown in the Pittsburgh story correct for the order of 35,000 tons.

Oil men in Tulsa regarded as significant the fact the distance from the proposed East Texas terminal of the Sinclair line to Mexia, Tex., and thence north to McCloud, Okla., near Oklahoma City, the southern terminal of the Sinclair pipe line to Coffeyville, Kans., is just about 265 miles. The Oklahoma City-Coffeyville line of the Sinclair company is 12-inch.

TEXAS PIPE LINE BILL DEAD?

AUSTIN, Tex., Apr. 27.—Withdrawal from the house calendar of the bill to fix rates of common carrier oil pipe lines at not to exceed 10 per cent on their investment by its author, Representative Dewey Young, is looked upon as foretelling the failure of final passage of the measure, even should it be given a place on the calendar at a later date. The pending bill, which would divorce the retail selling of oil and oil products from other branches of the industry, has only 20 possible supporters in the house, according to a recent poll.

GAS TO AMARILLO

AMARILLO, Tex., Apr. 27.—The first fuel from the new municipal gas supply was turned into homes in Amarillo, Tex., Saturday, displacing the former gas supply which was served to the city by the Amarillo Gas Co., subsidiary of the Prairie Oil & Gas Co. The new system is supplied by the Huber Petroleum Co.'s 6-inch line from Hutchinson County gas wells.

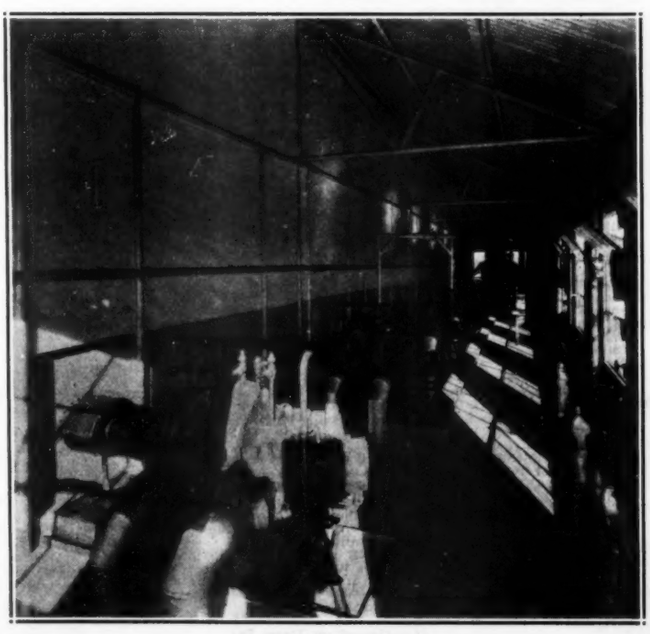
KANSAS GAS LINE

The Winchester Oil & Gas Co. has started to lay a 4-inch pipe line from a lateral from its main trunk line in the Medicine Lodge gas pool of Barber County, Kansas, to Carmen, Dacoma and Aline, in northern Oklahoma. The Winchester company is now supplying 11 Oklahoma towns with gas.

SUN SURVEYING FOR LINE

The Sun Pipe Line Co. is making surveys for a crude oil line from East Texas to tidewater at Sabine Pass. The Sun Oil Co. has a large tank farm near the Gulf near Beaumont, Tex., and has a refinery at Marcus Hook, Pa., with a capacity of 40,000 bbls. daily.

INTERIOR VIEW PIPE LINE PUMP STATION



SHAMROCK TO BUILD OIL LINE TO THE GULF

KILGORE, Tex., Apr. 27.—Announcement is made here by C. L. Todd, general superintendent of the Shamrock Pipe Line Co., that preliminary plans are under way for the construction of a 10-inch line from here to the Gulf at an approximate cost of about $5,000,000. The line will have a capacity of 40,000 bbls. daily, it was said. There will be six booster stations.

The line will be built from Arp through Kilgore on to Longview. The Shamrock Pipe Line Co. is a subsidiary of the Shamrock Oil & Gas Co., which is now planning to pipe gas from the Panhandle to Fort Worth. Mr. Todd states his company owns no acreage within this area, and its sole investment in this field will be the pipe line.

COMPLETE CINCINNATI UNIT OF GULF LINE

The Gulf Pipe Line Co. of Pennsylvania has completed the unit from a point in southeastern Indiana to the new Gulf Refining Co.'s refinery at Cincinnati, Ohio. The Cincinnati unit was given a water test Friday and all connections were found tight. Crude oil from the Oklahoma-Kansas-North Texas fields will soon be moving through it to Cincinnati.

KETTLEMAN GATHERING SYSTEM

LOS ANGELES, Calif., Apr. 27.—The construction of an oil and gas pipe line gathering system for the Kettleman Hills Field is to start at once in order to handle current and future production under the control of the Kettleman North Dome Association.

At a meeting of the association, $450,000 was appropriated for the work, which is expected to be completed by May 15 when three new wells are scheduled to be placed on production. It is the intention of the association to construct an oil and gas pipe line system for immediate needs. Each gathering line will be approximately 14 miles in length, and 12, 14 and 16-inch pipe will be laid.

The association plans to construct a tank farm on the eastern flank of the field in order to flow the crude by gravity into storage. Other work outlined for the field is the building of a permanent field camp from which to carry on the field's development.

STANOLIND EAST TEXAS OUTLET

FORT WORTH, Tex., Apr. 27.—The Stanolind Crude Oil Purchasing Co. is arranging to transport all the crude oil that the Stanolind Oil & Gas Co. produces in the Kilgore Pool of Rusk County, East Texas. It is now building a 50-car loading rack at Kilgore in Gregg County.

Rumor has it that the Stanolind Pipe Line Co. may later build a connection from its Corsicana-Mexia line to the East Texas Field. This has not been confirmed.

PANHANDLE ILLINOIS WORK

SPRINGFIELD, Ill., Apr. 25.—Prompt and careful consideration of the Panhandle Illinois Pipe Line Co. application for a certificate to construct and operate a pipe line for transmission of natural gas was promised by Chairman Charles H. Hadley of the commission.

Mr. Hadley's statement followed a report that work on the proposed line apparently had been halted until the commission decided the case.

East Texas Output Hits 300,000 Barrels

Rusk-Gregg Area Which Goes on Proration May 1 Makes the Most of Its Open Period. Many New Big Wells

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 27.—Probably the two most interesting tests in the East Texas district during the week were the Mudge Oil Co.'s No. 1 Richardson, in the David Ferguson Survey, Upshur County, approximately 2½ miles northwest of production in the Lathrop Pool, Gregg County; and Sinclair Oil & Gas Co.'s No. 1 Wiley, in the James Jordan Survey, a little over a mile west of the Guy V. Lewis' No. 1 Cooke, last western extension well of the Joiner Pool, Rusk County.

The former test is now shut down to cement casing after it was drilled to a total depth of 3,742 feet and a drill stem test made at 3,708 feet, at which time it started to flow, showing up as a potential producer with considerable gas pressure. This will be Upshur County's first producer. Other tests drilled north of the Lathrop Pool, and east of this test, proved dry and having been abandoned, limited production in that direction.

Sinclair Oil & Gas Co.'s No. 1 Wiley, west of the Joiner Pool, over in Smith County, the test referred to above, drilled plug on April 26 and tubing was run, but the question now is whether or not the company will plug it back to shut off salt water which it encountered, for today it was making 95 per cent salt water, and apparently marks the western limits of this pool. Fairly saturated sand was cored at 3,853-61 feet, and the hole may be plugged back in an effort to produce it. Elevation is 540 feet.

Sinclair Oil & Gas Co.'s No. 1 Cole, near the center of the Samuel Brooks Survey, Gregg County, 3 miles southeast of Selby Oil & Gas Co.'s producer on the Snavely farm in the William Tyndale Survey, came in late Sunday afternoon showing up for a good well, but no gauges were announced. It was then shut in to await pipe line connections which will have to come from the Kilgore Pool where the company has a gathering line and loading rack.

The Sinclair-Texas Pipe Line Co. will lay a 12-inch line out of the pool southwest to Colonel's Station (Mexia), where it will tie in to the Prairie Pipe Line Co.'s trunk line which runs south to the coast, and north to Oklahoma. This line will serve as the company's main outlet to its many leases in Gregg, Rusk and Smith Counties. The last lease proven for production, in the Samuel Brooks Survey, by the Sinclair Oil & Gas Co. opens up 640 acres in one block, and although this late-discovered well is setting close to the water line, the lease will no doubt prove another prolific one for the company. Total depth is near 3,315 feet below sea level. The sand was cored from 3,647-60 feet. Survey of the hole showed a deviation of 7 degrees from vertical at 1,600 feet, 5½ degrees at 2,500 feet and 5 degrees at 3,500 feet.

The well is approximately 3½ miles northwest of Heep Oil Co.'s No. 1 Barber, in the McCurry Survey, which came in last week helping to prove the connection of the Kilgore and Lathrop Pools by production, and this last extension proves hundreds of more acres to production, and helps to substantiate the belief that the pools will be connected.

Sinclair Oil & Gas Co.'s No. 1 Jarvis, in the Juan Vartus Survey, around 3 miles south and west of the Lewis extension well of the Joiner Pool, Smith County, came in tonight and produced 235 bbls. the first hour from sand at 3,699-3,710 feet. The well was shut in for lack of tankage.

Vagaries of Gregg Area

To show up the vagaries of the Gregg County producing area, Republic Production Co.'s No. 1 Fisher, in the John Ruddle Survey, 3 miles southwest of the main part of the Lathrop Pool, and a west offset to East Texas Refining Co.'s No. 2 Fisher, cored only 3 feet of sand, at 3,449-52 feet and encountered the Georgetown shortly below it, bottoming the hole in Georgetown lime at 3,517 feet. The test made 130 bbls. the first hour through a 1-inch choke on casing, with tubing closed. Coring only 3 feet of sand makes acreage to the south questionable, but only slightly disturbs the belief that production will be tied up between the pools. The Sinclair Oil & Gas Co.'s good producer on the Cole lease to the southwest, in the Brooks Survey, will help dispel any gloom that might be reflected because of the small amount of sand found in the Republic well. The sand may be expected to be found extremely thin in some of the wells, and some of them may even miss it and fail to produce.

The Magnolia Petroleum Co. plugged back its No. 1 Florey, the salt water well in the Peter Holmes Survey on the west edge of the Kilgore Pool, northern Rusk County. Plugging back to base of the pipe is hoped to shut off the water which showed up shortly after the well came in about three weeks ago. Shell Petroleum Corp.'s No. 1 Wiley, a northeast offset to the Magnolia well, is also reported as making some water while flowing through choke. The reports stated about 3 per cent water on choke.

Kilgore's Big Production

Total production from the Kilgore district as of April 23 was 206,600 bbls. from 87 wells, an average of 2,374 bbls. per well, the temporary allowance being set at 571 bbls. Actual production of the Lathrop Pool in Gregg County on April 23 was 71,803 bbls. from 29 wells, with 6 other wells standing shut in.

The market outlet of the Kilgore Pool is above the actual production figure of 107,000 bbls. daily, consequently the Kilgore advisory committee has asked that the allowable of 40,000 bbls. per day for that area be increased to help take care of the demands for oil from that pool.

Proration Problems

It appears that all of the pools will witness the same troubles: pipe line and purchasing companies desiring more oil per day than the allowables which have been set by the commission for the fields, and if the operators themselves are desirous of proration now, it begins to appear that the purchasing companies would cause trouble with their nominations for more oil, especially the pipe line companies which have contracts to fill and which have had standing contracts with operators for their oil.

An allowance of 411 bbls. per well for the 150 producing wells in the Joiner area, Rusk County, has been fixed by the advisory committee of that area, and the Railroad Commission, but during the last few days companies and operators alike have opened up their wells to capacity, proration not going into effect until May 1, although partial proration went into effect on April 24, only to be dispensed with a couple of days later when the wells were again opened up.

The three advisory committees in charge of East Texas proration met at Longview today with representatives of pipe line and purchasing companies in an effort to get proration working, but the desire of some of the smaller pipe line companies for more oil, as mentioned above, seems to be the present fly in the ointment in prorating the fields. There are more angles to the proration of the East Texas fields than perhaps any other field yet put under proration, and the committees and men handling the work truly have a gigantic task ahead of them to satisfy operators, pipe line and purchasing companies, lease and royalty holders alike, and although all of them cannot be satisfied, injunctions will no doubt spring up throughout the various areas because of complaints on the part of one or the other of these interested parties.

Using Air Lift

Three companies, Sinclair Oil & Gas Co., Tidal Oil Co. and L. H. Hunt, Inc., have resorted to air lift to increase production of some of their offset leases in the Joiner Pool, but restraining orders have been issued to stop this practice, and the Railroad Commission's order against using artificial means of flowing the wells will no doubt be invoked to prevent other companies from resorting to such methods of raising the oil.

Many of the wells which have been producing naturally have gone dead in the Joiner and Kilgore Pool when offset wells were drilled and relieved what little pressure the former wells maintained, and many of the operators and companies are either buying or asking for quotations on pumping equipment and belting, preparing themselves for the eventuality which has been expected from the beginning of the pools, and when the gas pressure was found to be small.

Another angle to the proration problem in the three producing areas is the difference in prices paid by different purchasing companies in the field. Operators are beginning to inquire as to who will connect with their wells, for this is a weighty question due to some of the companies paying only half, or less, of the posted price of the Humble Oil & Refining Co. and Magnolia Petroleum Co. No operator can feel happy to be connected to a line of a company which is paying 25 to 30 cents for oil while a neighboring lease is connected by a line of a company which is paying 65 to 67 cents. Con-

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EAST CENTRAL TEXAS WILDCATS

Week Ending April 25

Company, well, farm, name, section and block—	Remarks:
CHEROKEE COUNTY	
D. H. Byrd et al's No. 1 Dixie, 1,385 ft. from N along E line of G. W. Forman Sur. from NW cor. of W. H. Felder 854-ac. tract and 150 ft. W at right angles to E line	Drlg. 3,840 ft.
Rowan and Nichols' No. 1 Owsley, 530 ft. from N and 1,530 ft. from E line of Loman Sur.	Drlg. 3,200 ft.
McDonald Bros.' No. 1 Newton, center of 113-ac. tract, Thomas Quevedo Sur., 3 miles N of Jacksonville	Derrick.
Sinclair Oil & Gas Co.'s No. 1 G. T. Martin, 200 ft. from N and 629 ft. from W line of 62.8-ac. tract, Larkin Baker League Sur.	Rig up and shut down.
Sinclair Oil & Gas Co.'s No. 1 Thomas McRae, 320 ft. from E and 4,989 ft. from S of farm, F. J. Vallanova Sur.	Shut down 3,909 ft.
William A. Stone's No. 1 Blount Decker, 900 ft. E of E line of S. Selman Sur. and 1,200 ft. S of N line of E. M. Decker 406-ac. tract in George Ruddle Sur.	Drlg. 3,710 ft.
Walton Oil Co.'s No. 1 E. Singletary, 250 ft. W and 150 ft. N of NE cor. of M. Lacey Sur. and in Water Sur. on Singletary 84-ac. tract	Shut down 1,386 ft.
DELTA COUNTY	
Delta Development Co.'s No. 2 Haya Kinney, 300 ft. S of No. 1 Cooper, Townsite Sur.	Shut down 2,868 ft.
D. S. Hoods' No. 1 J. J. Balser, 185 ft. from S and 580 ft. W of Balser 40-ac. tract in SE cor. T. B. Laddin Sur.	Shut down 1,559 ft.
Worthington and Stedman's No. 1 W. H. Dejehett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur.	Shut down 2,300 ft.
GREGG COUNTY	
Arkansas Fuel Oil Co.'s No. 1 J. C. and R. S. McKinley, 250 ft. from N and 175 ft. from E of 160-ac. tract and 87-ac. lease, G. W. Hooper Sur.	Location.
Arkansas Fuel Oil Co.'s No. 1 G. A. Castleberry, 250 ft. from S and 250 ft. from W of 52-ac. tract and lease, Dolores Sanches Sur.	Location.
Arkansas Fuel Oil Co.'s No. 2 P. D. Harrison, 282 ft. S and 142 ft. E of SE cor. of Tenery 40-ac. tract, William Robinson Sur.	Derrick pattern.
P. P. Ash et al's No. 1 A. H. Tubbs, 1,550 ft. from S and 4,120 ft. from E of survey, Dolores Sanches Sur.	Derrick.
Badgett and Cooper's No. 1 C. C. Clemons, 155 ft. from E and 155 ft. from S of 60-ac. tract, Dolores Sanches Sur.	Spudding.
Bell & Graddy's No. 1 M. George (or Daniels), 225 ft. S and 650 ft. W of 26-ac. tract, Mary Van Winkle Sur.	Fishing; T. D. 2,719 ft.
Blackstock et al's No. 1 F. E. McGrede, 150 ft. from E and 150 ft. from S of 36-ac. tract and 10-ac. tract, Dolores Sanches Sur.	Material on ground.
Bridwell et al's No. 1 D. L. Magrill, 169 ft. from E line and 150 ft. from S line of 45-ac. tract, Dolores Sanches Sur.	Spudding.
B. L. Brookin's No. 1 J. M. Tuttle, 150 ft. from N and 205 ft. from E of 12½-ac. lease, William H. Castleberry Sur.	Derrick.
W. H. Byrd, Jr.'s No. 1 Art Mitchell, 150 ft. from E and 150 ft. from S of 15-ac. lease, 1,300 ft. from S and 850 ft. from E of survey, John Carithers Sur.	Run liner; T. D. 3,594 ft.
D. H. Byrd and Gulf Prod. Co.'s No. 1 Canimaras Bros., 5,506 ft. from NW, 1,528 ft. from NE of 817.6-ac. tract, 1,820 ft. from N, 2,505 ft. from W of survey, Harden Edwards A-64 Sur.	Rig up and shut down.
Callahan, Thompson et al's No. 1 Fenn, 463 ft. from N and 150 ft. from E. 778 ft. from S of 44.5 ac. tract, David Ferguson Sur.	Derrick.

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Surprise Producer in Jones County

One Mile East of Production and May Indicate New Pool. Three Deep Tests Drilling in Wichita County

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 27.—West Texas showed a decided decline in production this week, a daily average drop of 19,605 bbls. from 239,204 bbls. to 219,599 bbls. Reagan and Pecos Counties showed the largest decreases, Reagan because of shutting in two of the large deep producing wells, and Pecos because of curtailing the pool to a lower figure.

Ungren and Frazier's No. 1 King, located 165 feet from the south and 150 feet from the west of the northeast corner of lot No. 6 M. Bueno Survey, was a surprise well for Jones County this week when it came in making 600 bbls. of oil in seven hours from pay topped at 1,993-2,006 feet. Total depth is 2,006 feet. More tanks are being erected for a 24-hour test, and the well looks good for at least 2,000 bbls. a day, producing from a pay horizon which has heretofore yielded but inconsequential wells in the Hawley area. This well is approximately 1 mile east of present production in this pool, which was opened up a couple of years ago by "Cowboy" Evans. Not much attention has been given to this area, but wells of this character are sure to bring a renewal of interest and other tests in the immediate vicinity, and a pool of major importance may yet be proved near the town of Hawley, northern Jones County.

Eppenauer's No. 1 Salisbury, the northern extension well of the Loving County Pool, is cleaning out preparing to deepen about 12 feet, to 4,412 feet where it will be given a second shot. It flowed 82 bbls. of oil ending 7 a. m. April 27 and 125 bbls. during 24 hours ending 7 a. m. April 26. The first shot was 190 quarts from 4,343-82 feet.

Webb and others' No. 3 Nutt located in Section 10, Gonazles County School Lands, in the Tankersley Pool, tooped the pay last week at 1,397 feet and is bottomed at 1,464 waiting for connections, and is pulling pipe to test. Oil rose 1,000 feet in the hole in seven hours, and the test is assuring the pool of another small producer. It is 750 feet from the north and 200 feet from the west lines of the southeast corner of the northwest quarter of the section.

Wichita Falls District

The Texas Company's No. 1 Johnson in Block L, S.P.R.R. Survey, Foard County, is underreaming 6⅝-inch casing to bottom preparing to drill deeper from 3,725 feet where it is now standing making 1½ bailers of water per hour. It encountered more gas this week from 3,618-30 feet, and a saturated lime showing a little oil from 3,639-40 feet, later going into white lime at 3,715-25 feet. This is perhaps the most interesting well in the district as it may possibly open up a new pool in the county and district.

Deep Oil Development Co.'s No. 1 John Hirshi, located in the David Cowan Survey, Wichita County, is another interesting and important test in the district, being one of the three deep tests now drilling in the district. Last total depth report was 5,265 feet in lime, drilling with no showings of oil or gas.

The district's proration troubles seem to be no nearer to settlement than they did a year ago, and the committees of the district meet every now and then in an effort to adjudicate matters, but apparently fail, and distress crude continues to be sold to local refineries under the posted prices, with several smaller topping plants reported going in at various points of the district to process some of the distressed oil.

COMPLETIONS FOR WEST TEXAS

Crane County

Gulf Production Co.'s No. 92 McElroy, top pay 2,883 feet, shot with 230 quarts from 2,897-2,997 feet, initial production 307 bbls., total depth 2,997 feet.

Ector County

Southern Crude Oil Purchasing Co.'s No. 2 Cowden, top pay 4,120 feet, initial production 450 bbls., total depth 4,302 feet.

Pecos County

Corvette Oil Co.'s No. 2 Monroe, top pay 443 feet, initial production 750 bbls., total depth 474 feet.

Ward County

Rixford and Fuglarr's No. 1 Booger, top pay 2,170 feet, initial production 50 bbls., total depth 2,240 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Texas Interstate Pipe Line Co.'s No. 1-108 Burnett, first gas 2,218-20 feet, 5,000,000 feet of gas at 2,365-85 feet, 8,000,000 feet of gas 2,435-44 feet, initial production 15,000,000 feet of gas, total depth 2,514 feet.

Gray County

Sanders and others' No. 2 Sullivan, first gas 2,958 feet, top pay 3,134-36 feet, increase 3,210-17 feet, initial production 25 bbls. oil and 3,000,000 feet of gas, total depth 3,265 feet.

Hutchinson County

Continental Oil Co.'s No. 1 Moore, top pay 3,048 feet, shot 160 quarts 3,035-82 feet, top pay 3,048 feet, initial production 142 bbls., total depth 3,085 feet. Prairie Oil & Gas Co.'s No. 69-A Johnson, total depth 3,085 feet, plugged back to 2,750 feet, shot 70 quarts 2,728-50 feet, top pay 2,745 feet, initial production 1 bbl. oil and 8,000,000 feet of gas.

Moore County

Continental Oil Co.'s No. 1 Brown, show of gas 2,870 feet, made 2,800,000 feet of gas, total depth 3,655 feet, plugged back to 3,320 feet, initial production 13,765,000 feet of gas.

RUNS THROUGH MAIN TRUNK LINES

Company, size, location—	Bbls.
Atlantic, 10", Houston	18,972
Gulf, 10", Ranger	36,239
Humble, 2-8", San Angelo	19,982
Humble, 10-12", Comyn	44,945
Illinois, 2-8", Del Rio	35,240
Magnolia, 8", De Leon	25,616
Pasotex, 8", El Paso	11,691
Shell, 10", Healdton	26,383
Shell, 10", Houston	28,574
Texas, 12", Houston	22,410
Total	270,052

RUNS TO WEST TEXAS REFINERIES

Big Spring Ref. Co., Big Spring	423
Burford Ref. Co., Pecos	4,301
Cosden Ref. Co., Big Spring	7,076
Col-Tex Ref. Co., Colorado	3,317
Great Western Ref. Co., Big Spring	2,463
Tonkawa Ref. Co., Pyote	1,652
Wickett Ref. Co., Wickett	295
Total	24,527

TANK CAR SHIPMENTS

Big Lake from Texon	3,000
Fox & Thorsen from Mertzon	54
Southern C. O. P. Co., from Wickett	2,024
Total	5,078

Total daily average production	254,026
Total daily average distribution	299,657
Daily average from storage	45,631

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending April 27

Company, well, farm name, section and block—	Remarks:
CARSON COUNTY	
Deep Lake Oil Co.'s No. 1 Keys, NE cor. SW, Sec. 1, Blk. 4, I.&G.N. Sur.	Drlg. 150 ft.
Interstate Prod. Co.'s No. 1 Coffee, C S½ NW, Sec. 15, Blk. 4, I.&G.N. Sur.	Drlg. 2,175 ft.
North American O. & G. Co.'s No. 1 Burnett, 1,341 ft. S, 662 ft. E, of S E½, Sec. 80, Blk. 4, I.&G.N. Sur.	Drlg. 545 ft.
Red River Gas Co.'s No. 1-A Bennett, 660 ft. N, 660 ft. W, NW, Sec. 2, Blk. 5, B.&B. Sur.	Location.
Red River Gas Co.'s No. 5-A Bivins, 1,320 ft. S, 660 ft. E, Sec. 45, Blk. B-20, G.&M. Sur.	T.D. 2,752 ft; 31,000,000 ft. gas.
The Texas Co.'s No. 1 Schaffer, C SW, Sec. 68, Blk. 4, I.&G.N. Sur.	S.D. 2,300 ft.
The Texas Co.'s No. 1 Bednarz, 817 ft. S, 172 ft. W, S 100 ac. of SW, Sec. 2, Blk. 4, I.&G.N. Sur.	Drlg. 1,950 ft.
CHILDRESS COUNTY	
C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.
COLLINGSWORTH COUNTY	
Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	S.D. 1,740 ft.
COTTLE COUNTY	
Darby Oil Co. and Merry Bros. & Perrin's No. 1 Richards, 330 ft. NE, Sec. 13, B.S.&F. Sur.	S.D. 3,805 ft.
GRAY COUNTY	
Anderson et al's No. 2 Vollmert, 330 ft. N and W, SW, Sec. 140, Blk. 3, I.&G.N. Sur.	Rig.
Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur.	Spudded and S.D.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur.	S.D. 740 ft.
Cree Hoover & Traham's No. 1 Delmar, 330 ft. S line, 330 ft. W line, NW, Sec. 105, Blk. 3, I.&G.N. Sur.	Rig.
Danciger O. & R. Co.'s No. 1-A Barrett, NW cor. S½ NE, Sec. 128, Blk. 3, I.&G.N. Sur.	Coring for csg. point; T.D. 3,060 ft.
Danciger O. & R. Co.'s No. 1-B Barrett, SW cor. N½ NE, Sec. 128, Blk. 3, I.&G.N. Sur.	Drlg. 2,515 ft.
Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur.	S.O. 3,134-65 ft. and 3,210-17 ft; estimated 2 bailers; T.D. 3,265 ft.
Danciger O. & R. Co.'s No. 1 Barnett, 231 ft. S, 330 ft. W, E½ of N 56 ac., Sec. 136, Blk. 3, I.&G.N. Sur.	S.D. 3,097 ft; 5,000,000 ft. gas 3,097 ft.
Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 334 ft. W of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur.	S.D. 3,351 ft.
Gulf Prod. Co.'s No. 1 Faulkner (old well being drilled deeper), 330 ft. N line, 330 ft. E line, NE S½, Sec. 33, Blk. B-2, H.&G.N. Sur.	T.D. 2,942 ft; 1,150 bbls; swbng.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-3, H.&G.N. Sur.	S.D. 2,770 ft; P.B. 2,430 ft. and shot with 80 qts. 2,409-30 ft.
Magnolia Pet. Co.'s No. 1 Barrett, 330 ft. S and E, NE, Sec. 112, Blk. 3, I.&G.N. Sur.	Drlg. 3,190 ft.

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WILDCAT OPERATIONS IN WEST TEXAS

Week Ended April 27

Company, well, farm name, section and block—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor. Sec. 24, School Blk. A-46	Cleaning out; total depth 4,648 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.
BORDEN COUNTY	
George Goodrum's No. 2 Conrad, 1,450 ft. from N and 2,500 ft. from E lines, Sec. 55, Blk. 25, H.&T.C. Sur.	Location.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Total depth 2,800 ft.; shut down.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.
COKE COUNTY	
Reed, Hitchens et al's No. 1 Duncan, 1,980 ft. from S and 1,680 ft. from E of Sec. 239, Blk. 2, H.&T.C. Sur. (4,500-ft. cable test)	Shut down 30 ft.
CONCHO COUNTY	
Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 163, T.&N.O. Sur.	Shut down 267 ft.
Betts & Dennis' No. 1 H. E. Woods, 710 ft. from E and 150 ft. from S Sec. 3, H.E.&W.T. Sur.	Shut down 80 ft.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	Shut down 1,850 ft.
CRANE COUNTY	
Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Total depth 5,336 ft.; plugging back to shoot.
E. H. Sides and others' No. 1 B. P. Nolen, 150 ft. from S and 150 ft. from W of N 160 acres, Sec. 8, Blk. 31, H.&T.C. Sur.	Straightening crooked hole 170 ft.
CROCKETT COUNTY	
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.
CULBERSON COUNTY	
Cranfill Bros. and Sholts' No. 1 Seay, 2,310 ft. from S and W Sec. 45, Blk. 60, Public School Land	Shut down 2,062 ft.
Kornrumpf et al's No. 1 Garren, 330 ft. S and W Sec. 15, Blk. 79, Public School Land	Shut down 1,280 ft.
DAWSON COUNTY	
Al augh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur.	Spudded 20 ft. and shut down.
ECTOR COUNTY	
Galt, Brown & Penn's No. 1 Cowden, C SE Sec. 12, Blk. 44, Twp. 2s, T.&P. Sur.	Drlg. 3,580 ft.
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M. Br.&A. Sur.	Shut down 3,275 ft.

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EAST CENTRAL TEXAS

(Continued from Page 42)

sequently the question is asked, "Who is going to connect to my wells?"

Allowable Production

The allowable production for the Lathrop area, Gregg County; Kilgore area, Rusk County, and Joiner area, Rusk County, is set out in the following schedule:

	Apr. 23 to May 15, 1931	May 15 to June 1, 1931	June 1 to June 15, 1931	June 15 to July 1, 1931
Latrop area	60,000	64,000	66,000	68,000
Kilgore area	40,000	44,000	46,000	48,000
Longview area	30,000	42,000	33,000	34,000
Total	130,000	140,000	145,000	150,000

These schedules are subject to increases for wells entering production after the beginning of each proration period.

E. A. Sessums has been named by the Railroad Commission to be umpire for the Joiner Pool. He has been assistant to Mr. Andrews, umpire of the Van Pool, Van Zandt County, up to taking over his new work in Rusk County.

Cherokee Test is Dry

Sinclair Oil & Gas Co.'s No. 1 McRay in the Vallanova Survey, in northeastern Cherokee County was abandoned at a total depth of 3,909 feet precluding the possibilities of the Joiner Pool being extended over into this county.

News from the district states that royalty has taken a decided change in prices, having assumed an increasing value, this probably due to the posting of higher prices in the district by the Humble Oil & Refining Co. and Gulf Pipe Line Co. in the past week, bolstering the morale of the producers and royalty owners, and making their properties look worth more than they did before the promise of proration was made, and when prices had sunk to a 15-cent level.

EAST CENTRAL TEXAS PRODUCTION

Boggy Creek	2,535
Cedar Creek	30
Currie	269
Hill County	30
Mexia	3,349
Nigger Creek	137
Powell	4,187
Richland	115
Rusk and Gregg Counties	300,924
Van	40,194
Wortham	475
Total East Central Texas	352,248
Week ended April 25	280,101
Increase	72,147

WEEK'S COMPLETIONS

Gregg County

Arkansas Fuel Oil Co.'s No. 1 W. L. Hestland, sand 3,606-18 feet, initial production 107 bbls. in 30 minutes open, total depth 3,619 feet.

Jule Alford's No. 1 Palmer, abandoned location.

Arkansas Fuel Oil Co.'s No. 1-C F. K. Lathrop, oil sand 3,600-12 feet, initial production 384 bbls. in 30 minutes, wide open, total depth 3,678 feet.

Beeler & Beeler's No. 1 George Anderson, abandoned location.

Blackwell Oil & Gas Co.'s No. 1 Maggie Magrill, oil sand 3,658-73 feet, initial production 460 bbls. per hour, total depth 3,674 feet.

Crump and Hanagan's No. 1 Dallas Caldwell, oil sand 3,479-91 feet, initial production 380 bbls. in seven hours, total depth 3,564 feet.

Danciger Oil & Refining Co.'s No. 1 C. C. Clemons, oil sand 3,591-3,613 feet, initial production 180 bbls. in 15 minutes, total depth 3,614 feet.

East Texas Refining Co.'s No. 2 Caddie Fisher, oil sand 3,513-45 feet, initial production 3,000 bbls. in 12 hours, total depth 3,545 feet.

Heep Oil Corp.'s No. 1 Barber, oil sand 3,523 feet, initial production 500 bbls. first hour on 1-inch tubing choke, total depth 3,553 feet.

Tom D. Humphreys and other's No. 1 A. F. McAbee, top Pecan Gap 2,370 feet, base Pecan Gap 2,902 feet, top Georgetown 3,538 feet, dry and abandoned, total depth 3,578 feet.

Magnolia Petroleum Co.'s No. 3 Bun Rodden, oil sand 3,546-55 feet, initial production 528 bbls. first hour, wide open, total depth 3,555 feet.

Magnolia Petroleum Co.'s No. 4 Bun Rodden, oil sand 3,568-81 feet, initial production 360 bbls. in 50 minutes through tubing and one-third-inch line on casing, total depth 3,595 feet.

Harry Moss and others' No. 1 G. B. Tenery, oil sand 3,561-86 feet, initial production 900 bbls. first hour, wide open, total depth 3,586 feet.

Oriental Oil Co.'s No. 1 F. Johnson, top sand 3,524 feet, 140 bbls. in 30 minutes on sixty-sixty-fourths-inch tubing choke, total depth 3,542 feet.

Pharis and Sample's No. 1 Maud Smith, abandoned location.

Pilot Oil Co.'s No. 1 G. E. McGrede, oil sand 3,600-78 feet, initial production 227 bbls. per hour on 1-inch choke and one-fourth-inch casing line, total depth 3,681 feet.

Roeser & Pendleton's No. 2 Bun Rodden, oil sand 3,561-81 feet, initial production 280 bbls. first hour through 2½-inch tubing choke, total depth 3,581 feet.

Shipper and Lacey's No. 1 Maggie Magrill, oil sand and shale 3,644-56 feet, initial production 750 bbls. first hour, one-fourth-inch line out tubing, total depth 3,656 feet.

B. A. Skipper Oil and others' No. 1 Thad Snoody, oil sand 3,575-3,612 feet, initial production 113 bbls. first hour and 162 bbls. second hour, eleven-sixteenths-inch tubing choke, total depth 3,612 feet.

Werby and McMinn's No. 1 Solon King, top sand 3,603 feet, initial production 20 bbls. per hour through three-eighths-inch tubing choke, total depth 3,626 feet.

Tidal Oil Co.'s No. 1 Bean Heirs, top sand 3,555 feet, initial production 288 bbls. in two hours through fifty-sixty-fourths-inch tubing choke, total depth 3,633 feet.

Yount Lee Oil Co.'s No. 1-B F. K. Lathrop, oil sand 3,560-87 feet, initial production 360 bbls. 24 hours on one-fourth-inch choke, total depth 3,587 feet.

Yount Lee Oil Co.'s No. 2-B F. K. Lathrop, oil sand 3,592-3,615 feet, initial production flowed at rate of 9,264 bbls. for 15 minutes on two 2½-inch tubing lines and one one-half-inch line, total depth 3,616 feet.

Yount Lee Oil Co.'s No. 1-A R. S. McKinley, oil sand 3,573-3,600 feet, initial production 640 bbls. first hour wide open, total depth 3,600 feet.

Harrison County

Sinclair Oil & Gas Co.'s No. 1 Cora L. Davenport, top Georgetown lime 3,728 feet, dry and abandoned, total depth 3,734 feet.

Karona Petroleum Corp.'s No. 1 A. J. Bohler, dry and abandoned, total depth 3,161 feet.

Rusk County

Berry-Lewis' No. 2 Thompson, location abandoned.

British-American Oil Co.'s No. 2 Thompson, oil sand 3,675 feet, initial production 136 bbls. per hour, first hour open, total depth 3,675 feet.

British-American Oil Co.'s No. 3 Thompson, oil sand 3,675 feet, initial production 310 bbls. first hour open, total depth 3,675 feet.

R. I. Carter's No. 2 Thrash, top Pecan Gap 2,685 feet, base Pecan Gap 3,036 feet, oil sand 3,666-84 feet, initial production 300 bbls. first hour through casing, total depth 3,753 feet.

Cordova Union Oil Corp.'s No. 2 C. O. Christian, top sand 3,635 feet, initial production 185 bbls. first 45 minutes open, total depth 3,694 feet.

Cordova Union Oil Co.'s No. 4 C. O. Christian, top sand 3,658 feet, initial production 70 bbls. first hour on eleven-sixteenths-inch choke, total depth 3,710 feet.

Cranfill & Reynolds' No. 1 George Thompson, top sand 3,597 feet, initial production 78 bbls. first 30 minutes open, total depth 3,650 feet.

East Texas Oil Co.'s No. 1 Claud Ashby, location abandoned, total depth 2,160 feet.

East Texas Loan & Investment Co., top sand 3,591 feet, initial production 466 bbls. first four hours on fifty-five-sixty-fourths-inch choke, total depth 3,679 feet.

Foster and Deep Rock Oil Co.'s No. 1 Holland, top Pecan Gap 2,661 feet, base Pecan Gap 3,119 feet, oil sand 3,655-72 feet, initial production 700 bbls. 24 hours through casing, total depth 3,762 feet.

Gulf Production Co.'s No. 3 Rose May Griffin, top sand 3,619 feet, initial production 180 bbls. per hour through 2¾-inch tubing choke, total depth 3,697 feet.

Gulf Production Co. and Smith's No. 2 D. M. Peterson, top sand 3,646 feet, initial production 150 bbls. per hour through 2¾-inch tubing choke, total depth 3,709 feet.

Horseshoe Syndicate's No. 1 W. P. Brightwell, cored sand 3,706-14 feet, initial production 105 bbls. first 15 minutes open, total depth 3,739 feet.

Houston Oil Co.'s No. 1 W. P. Brightwell, top sand 3,595 feet, initial production 1,129 bbls. in 12 hours on various chokes, total depth 3,640 feet.

Houston Oil Co.'s No. 2 L. D. Crim, top sand 3,706 feet, initial production 2,782 bbls. first 12 hours on various chokes, total depth 3,767 feet.

Houston and E. M. Jones, top sand 3,665 feet, initial production 80 bbls. per hour on eleven-sixteenths-inch tubing choke, total depth 3,693 feet.

Houston and Smith's No. 3 D. M. Peterson, top sand 3,630 feet, initial production 78 bbls. first hour on eleven-sixteenth-inch tubing choke, total depth 3,710 feet.

Humble Oil & Refining Co.'s No. 13 L. D. Crim, top sand 3,711 feet, initial production 36 bbls. first hour on eleven-sixteenths-inch tubing choke, total depth 3,725 feet.

Humble Oil & Refining Co.'s No. 14 L. D. Crim, top sand 3,651 feet, initial production 11 bbls. first hour on eleven-sixteenths-inch choke, total depth 3,713 feet.

Humble Oil & Refining Co.'s No. 1 Kangerga, top Pecan Gap 2,716 feet, base Pecan Gap 3,071 feet, sand 3,695-3,759 feet, initial production 464 bbls. first hour through one-half-inch choke, total depth 3,759 feet.

Pete Lively and others' No. 1 Cox, sand and shale 3,681-3,751 feet, initial production 750 bbls. for three hours through casing, total depth 3,765 feet.

Magnolia Petroleum Co.'s No. 2 Ben Laird, top sand 3,606 feet, initial production 200 bbls. first 15 minutes open, total depth 3,626 feet.

Marine Oil Co.'s No. 2 Nat Bean, top sand 3,590 feet, initial production 100 bbls. first hour through tubing on one-half-inch choke, total depth 3,645 feet.

McMillan's No. 1 Blackwell, top Pecan Gap 2,670 feet, base Pecan Gap 3,070 feet, sand 3,665-97 feet, initial production 190 bbls. per hour through 1-inch tubing choke, total depth 3,697 feet.

McMann's No. 1 Finney, top Pecan Gap 2,580 feet, base Pecan Gap 3,040 feet, sand 3,623-44 feet, initial production 60 bbls. per hour through 1-inch tubing choke, total depth 3,644 feet.

Moody-Seagrave's No. 1 Thompson, top sand 3,697 feet, initial production 440 bbls. first hour open, total depth 3,697 feet.

Moss & Urshell's No. 1 Deason, sand 3,675-84 feet, initial production 135 bbls. per hour through casing, total depth 3,684 feet.

Olsen Brother's No. 3 Brown, top Pecan Gap 2,730 feet, base Pecan Gap 3,077 feet, sand 3,700-06 feet, initial production 80 bbls. per hour through tubing, total depth 3,775 feet.

Peery and others' No. 3 A. Thrash, top Pecan Gap 2,651 feet, base Pecan Gap 3,065 feet, oil sand 3,615-48 feet, initial production 1,000 bbls. in 4½ hours through casing, total depth 3,665 feet.

Petroleum Marketing Co.'s No. 1 Arnold, top Pecan Gap 2,694 feet, base Pecan Gap 3,104 feet, sand 3,663-72 feet, initial production 800 bbls. first 20 hours through tubing, total depth 3,718 feet.

Pilot Oil Co.'s No. 2 Finney, top Pecan Gap 2,660 feet, base Pecan Gap 3,035 feet, broken sand and shale 3,630-89 feet, initial production 750 bbls. in 24 hours through tubing, total depth 3,689 feet.

Pioneer's (Moody-Seagraves) No. 1 Deason, sand 3,658-66 feet, initial production 130 bbls. first hour through tubing, total depth 3,683 feet.

Pioneer Oil Co.'s No. 2 Taliaferro, sand 3,668-87 feet, initial production 105 bbls. per hour through tubing, total depth 3,727 feet.

J. S. Rushing's No. 1 George Thompson, sand 3,640 feet, initial production 433 bbls. the first hour open, total depth 3,690 feet.

Shasta Oil Co.'s No. 1 Pool, location abandoned.

Shell Petroleum Corp.'s No. 1 Wills, top sand 3,659 feet, initial production 116 bbls. first hour on eleven-sixteenths-inch choke, total depth 3,661 feet.

Sinclair Oil & Gas Co.'s No. 3 Holland, sand 3,609-23 feet, initial production 1,800 bbls., total depth 3,695 feet.

Snowden and McSweeney's No. 1 Ben Laird, top sand 3,597 feet, initial production 11 bbls. in 10 minutes through one-half-inch tubing, total depth 3,687 feet.

Turman's No. 1-B W. P. Brightwell, top sand 3,605 feet, initial production 227 bbls. first hour open, total depth 3,655 feet.

Turman's No. 5 Deason, sand 3,689-97 feet, initial production 100 bbls. per hour through tubing, total depth 3,721 feet.

C. E. Upchurch's No. 2 W. P. Brightwell, top sand 3,600 feet, initial production 150 bbls. first hour through eleven-one hundred sixty-fourth-inch tubing choke, total depth 3,675 feet.

Vitek's No. 1 Eaton, top Pecan Gap 2,714 feet, base Pecan Gap 3,090 feet, sand 3,681-3,705 feet, initial production 2,200 bbls. in 12 hours through tubing on various chokes, total depth 3,705 feet.

Walton-Houston Oil Co.'s No. 1 W. P. Brightwell, top sand 3,645 feet, initial production 187 bbls. through choke on tubing, total depth 3,685 feet.

Westheimer's No. 2 D. M. Peterson, top sand 3,682 feet, initial production 350 bbls. first hour through open tubing, total depth 3,798 feet.

Woodley Petroleum Co.'s No. 1 Ladd, top sand 3,652 feet, initial production 200 bbls. first hour through three-quarters-inch tubing choke, total depth 3,704 feet.

Woodley Petroleum Co.'s No. 2 D. M. Peterson, top sand 3,652 feet, initial production 260 bbls. per hour through three-quarters-inch tubing choke, total depth 3,690 feet.

Jack Younger's No. 1 Daisy Bradford, location abandoned.

Snowden and McSweeney's No. 2 Ben Laird, top sand 3,625 feet, initial production 89 bbls. first hour through eleven-sixteenths-inch choke, total depth 3,642 feet.

Moorefield's No. 1 Jessie Ector, top Georgetown lime 3,518 feet, dry and abandoned, total depth 3,702 feet.

John Olvey's No. 3 Crim, top sand 3,677 feet, initial production 80 bbls. per hour through eleven-sixteenths-inch tubing choke, total depth 3,712 feet.

McMahon Oil Co.'s No. 1 Mrs. S. B. Wills, top sand 3,660 feet, initial production 216 bbls. first hour through 2½-inch tubing open, total depth 3,663 feet.

Houston Oil Co.'s No. 4 W. P. Brightwell, top sand 3,647 feet, initial production 75 bbls. through eleven-sixteenths-inch choke on tubing, total depth 3,687 feet.

Humble Oil & Refining Co.'s No. 16 L. D. Crim, top sand 3,640 feet, initial production 94 bbls. first hour through eleven-sixteenths-inch tubing choke, total depth 3,642 feet.

Upshur County

Penn Oil Co. and Smith's No. 1 Gage, top Georgetown lime 4,034 feet, dry and abandoned, total depth 4,095 feet.

Van Zandt County

Pure Oil Co.'s No. 3 A. G. Mayfield, initial production 217 bbls. on eleven-sixteenths-inch choke, total depth 2,978 feet.

Pure Oil Co.'s No. 4 M. P. Neils, initial production 62 bbls. on eleven-sixteenths-inch choke, total depth 2,962 feet.

Pure Oil Co.'s No. 3 J. C. Stewart, initial production 120 bbls. on eleven-sixteenths-inch choke, total depth 2,936 feet.

Pure Oil Co.'s No. 4 M. F. Shirley, initial production 110 bbls. on eleven-sixteenths-inch choke, total depth 2,956 feet.

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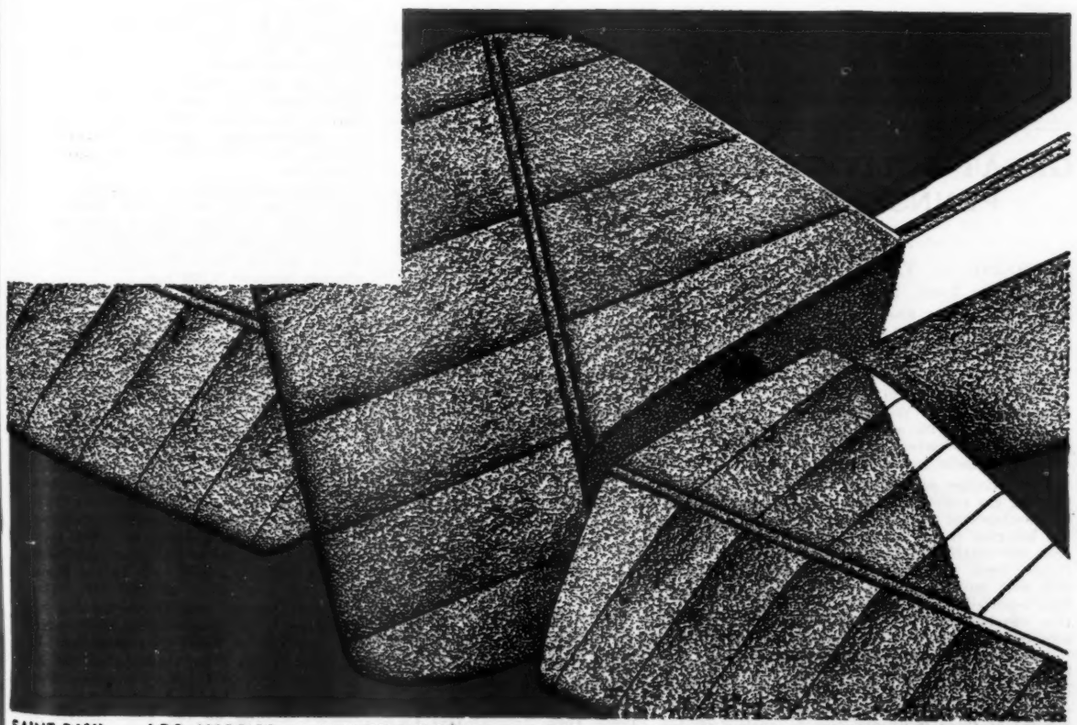

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Coshocton County Has Good Gasser

Duff City Gas Co. Acquired by Philadelphia Company. Twelve Completions in West Virginia. Boone County Is Most Active

By Staff Correspondent

PITTSBURGH, Pa., Apr. 27.—The property, wells, and lines, and business of the Duff City Gas Co. have been acquired, subject to approval by the Pennsylvania Public Service Commission, by the Philadelphia Company. It is understood that a consideration of approximately $250,000 is involved in the transaction. The Duff City Gas Co. serves Ross, McCandless, Ohio, Franklin and Marshall Counties with the some hundred miles of line comprising its distributing system. Ingomar, Highland and Keown Station are among the towns served. This company was incorporated in 1909 and reincorporated in 1928. Officers and directors include P. A. Brunn, president, W. F. Minteer, vice president; J. Merle Silk, secretary, and A. A. Scholze, treasurer. The distributing company of the Philadelphia Company is the Equitable Gas Co. in the Pittsburgh district.

SOUTHEAST OHIO

In Coshocton County, New Castle Township, the Preston Oil Co. completed its test on the Verna Cochran farm in the Clinton sand. It is a 3,000,000-foot gasser, and the best gasser reported from this section in some time. The test of the Leetonia Oil & Gas Co. on the Dave Bratton farm in Albany, Section 19, Lee Township, Athens County, was drilled to a depth of 1,156 feet in grit where it was found dry. C. W. Rich and others completed their second test on the J. E. Rich farm in the NW Section 17, Seneca Township, Noble County, in the Berea grit. This well was completed at 1,461 feet where it was shot. The result is a 2-bbl. producer.

Drilling in Ohio

In Guernsey County, Wheeling Township, the Preston Oil Co. is drilling its No. 5 on the L. C. Stocker farm in Section 9-12 at the 800-foot level, but James Sager and others have abandoned their second test on the James Sager farm in Section 19 and have torn down their rig. William Urban and others have made a location in Section 13 of Jackson Township, Guernsey County, on the Arthur Davis farm.

The Gordon Oil Co. and others' No. 3 have rigged up for No. 4 on the Ralph Huffman property, Lot 35, in Washington Township, Tuscarawas County. The second test of the Pure Oil Co. on the E. J. Hunkins farm in Section 5, Jackson Township, Muskingum County, has been drilled to the 700-foot level.

In Washington County, the Swingle Oil Co. has shut down its test on the Clarence McGrew farm in Section 7, Palmer Township. In Ludlow Township, the Fraseysburg Retail & Gas Co., Inc., is drilling on the S. R. Williamson farm in Section 4, while Maggie M. Immel has a rig standing for No. 4 on the Frank M. Covey farm in Marietta Township.

Charles R. Jones has drilled his No. 12 on the William T. Lewis farm in Cross Creek Township, Jefferson County, to 1,400 feet. The 700-foot level has been reached by the Atha Oil Co. in the drilling of its No. 18 on the Melick Brothers property in Section 21, Madison Township, Perry County.

WEST VIRGINIA

The West Virginia Field reported a total of 12 completions. Of this number 9 were gassers, and 1 was a 1-bbl. producer. Two dry holes were reported.

Boone County was the most active field, reporting 6 completions, of which number 5 were gassers. Godfrey L. Cabot brought in his No. 7 on the Youghiogheny & Ohio Coal Co. tract in Crook district at 3,015 feet. It was dry and is being abandoned. The test of Cap Davis and others on the Eliza J. Hardman farm in DeKalb district, Gilmer County, was completed in the Big Injun sand, where it was found dry. It has been plugged.

The only oil producer reported was No. 7 on the Boyd heirs farm in Grant district, Pleasants County, belonging to the First National Bank of St. Marys. This well was brought in as a 1-bbl. producer in the Injun sand.

Gas Wells

Godfrey L. Cabot brought in three very light gassers: No. 8 on the E. W. Arbogast farm in Crook district, which is producing natural gas from the 2,325-foot level; No. 42 on the Federal Coal Co. tract, completed at 3,329 feet; and No. 45 on the same tract, completed at 6,117 feet. The Federal Coal Co. tract is in Sherman district, Boone County, and the Arbogast farm is in the same county.

The Pure Oil Co. got a 500,000-foot gasser at 2,795 feet and in the Berea sand in its No. 4 on the L. Sutphin farm in Sherman district, Boone County, and a very light gasser in its No. 51 on the Federal Coal Co. tract. This well was completed at 2,508 feet in the Berea sand. The Manufacturers Light & Heat Co. drilled No. 3,478 down to 3,230 feet on the M. Bartrug farm in Church district, Wetzel County, as a gasser.

H. B. Davenport brought in a 250,000-foot gasser in its No. 3 on the Thompson Land & Coal Co. tract in Union district, Clay County, at 1,899 feet. Creed Barker and others got a similar well in their test on the St. Paul Church lot in Center district, Calhoun County. This well was completed at 2,080 feet in the Injun sand where it was dry, after being drilled through the Lime sand where the gas was found. In Sherman district of the same county, the Hope Natural Gas Co. drilled its No. 7,518 down to 2,094 feet in the Injun sand on the Ella Shaffer farm. The result is a very light natural gasser.

The Allegheny Gas Corp. has reached 2,162 feet in its test on the Victoria Adkins farm in Carrol district, Lincoln County. The operators are waiting for a test in the Berea sand. Other wells waiting tests are as follows: The test of W. H. Kirtley & Co. on the William Sunderland farm in Grant district, Cabell County, is at 2,154 feet and in the Berea sand; No. 3 of W. G. McCorkle and others on the J. A. Covert farm in Chapmansville district, Logan County, at 1,340 feet and in the Big Lime sand; and A. H. Jackson's test on the Elizabeth Campbell farm in Murphy district, Ritchie County, has been drilled down 2,032 feet. Howard Hall and others' test on the Martha Johnson farm in Union district, Tyler County, is now at 816 feet. The test of the same operators on the Frank Fonner farm in Union district, Tyler County, is at 828 feet; the second test on the same farm and belonging to the same operators. This well has been drilled down to a depth of 822 feet.

Drilling in West Virginia

The United Fuel Gas Co. has a fishing job in its No. 1,645 on the Presley Vineyard farm in Smithfield district, Roane County, at 5,005 feet, and the same company is drilling at the 6,535-foot level in its No. 4,053 on the J. M. Hinzman farm in the same district. No. 1,645 is an old well being drilled deeper. In Spencer district, Paul Weekley and others have their test on the Gay M. Sergent farm shut down at 2,125 feet.

In the same district, the Ohio Valley Gas Corp. has part of the material on the ground for No. 15 on the R. M. Jennings tract, and the Heck Oil Co. also has part of the material on the ground for No. 5 on the H. W. Allen farm in Reedy district. The Reedy Oil & Gas Co. has made a location for a second test on the A. J. Paugh farm in Curtis district.

In Calhoun County, Center district, the United Fuel Gas Co. is fishing for tools in No. 4,279 on the Tell McDonald farm at 800 feet. The test of the Rocksdale Oil & Gas Co. on the Roy Starcher farm in Lee district is drilling at the 1,825-foot level, and Ed. Smith and others are drilling their test on the John Evans farm at 1,910 feet. L. P. Bickel has drilled his test on the Louis Bennett farm in Center district to 2,070 feet.

Wiseman and Jackson have started drilling on their test on the Albert Wilson farm in Washington district, Calhoun County. The 75-foot level has been reached. The same operators have a rig standing on the Elizabeth J. Boothe farm for a test. The material is on the ground for No. 3 on the Fox and Morgan property in Lee district. This well is the property of F. F. McIntosh. Godfrey L. Cabot has selected a location for No. 3 on the Scott Umstead farm in Center district, while W. H. Bickel abandoned the location of his No. 4 on the John D. Collins farm.

W. H. Bickel has started the drilling of his No. 4 on the J. M. Bennett heirs' property in Center district. This well has been put down to 50 feet. Part of the material for No. 3 of the same operator, on the John Starkey farm, is on the ground, but it is probable it will be moved. The test of C. B. Lewis and others on the B. E. Summers farm in Sherman district has been drilled down to the 1,920-foot level.

R. C. Waggoner and others have made a location on the J. H. Hayhurst farm in Sheridan district of Calhoun County, as have W. W. Dailey and others for their test on the Rome Bowers farm. The United Fuel Gas Co. has moved material to the location of its No. 419 on the Ida Shroyer farm, and W. W. Dailey and others have a rig standing on the J. O. Mills farm.

Godfrey L. Cabot is drilling at 1,575 feet in his No. 5 on the Beaver Coal Co. tract in Slab Fork district of Raleigh County, and has a rig standing for No. 3 on the same company's tract in Trap Hill district. The test of the Thompson Harris Co. on the Samuel Hinkle farm in Williamsburg district, Greenbrier County, has been drilled to a depth of 1,940 feet.

In Monongalia County, the Pedlar Run Oil Co. has its test on the Lewis R. Hess farm in Clay district shut down at 2,570 feet, while the Philadelphia Gas Co. is drilling No. 5,402 on the J. Ray Conner farm at 1,120 feet.

In Clay County, Godfrey L. Cabot is building a road to the selected location for No. 9 on the Hill-Long tract in Pleasant district. The work of building the rig for the test of C. F. Wilson and others on the A. B. Hersman farm in Henry district, has been shut down.

SOUTHWEST PENNSYLVANIA

In the Southwest Pennsylvania Field operations are very nearly at a standstill. The Manufacturers Light & Heat Co. has drilled its No. 3,443 on the Felix Bell property in Wayne Township, Greene County, down to a depth of 1,145 feet, and D. L. Shafer & Co. have their test on the William Jones farm in the same township shut down at 850 feet. The Carnegie Natural Gas Co. is drilling at 2,840 feet in its second test on the George Bowers farm in Perry Township, and J. B. Orndoff has a rig standing on the J. E. Scott farm in Center Township. The Manufacturers Light & Heat Co. has started drilling on the John McGinnis farm in Richhill Township. This well is down to the 500-foot level.

With the exception of Greene County, Beaver County is the only county in the Southwest Pennsylvania Field in which there are any drilling operations, and in that county the Hobbs Oil Co. has drilled its test on the W. B. Thompson farm in Independence Township to 1,400 feet.

GREAT ACTIVITY IN NEW YORK-PENNSYLVANIA GAS DEVELOPMENT

By Special Correspondent

CORNING, N. Y., Apr. 25.—With wells in the Tioga, Pennsylvania, Field generally speaking about half way down to the Oriskany sand, and the starting of many more wells in the Wayne, New York, Field, developments in the gas region, of which Corning is the center, is concentrated at the present time on active drilling with about three or four weeks' time to elapse before many more wells are again to be brought in.

The activities of the past week in the Corning gas region were marked by town lot development in the Wayne area and the bringing in of two gas wells there, also the establishment of several additional town lot locations. The Cobble Hill well on the Watkins anticline has been reported as having shows of gas and this development is commanding local attention.

The Tioga, Pennsylvania, development has reached the half-way mark and past in the progress toward the extensive development following the Meaker well. Several of these wells are now in such position as to culminate their work by May 15. One of the noteworthy wells in the district, Penn-Ohio Gas Co.'s No. 1 Price, has encountered repeated difficulties and as a last resort was compelled to cement a portion of the hole and redrill in order to reach the Oriskany sand.

Survey is being pushed for gas lines and a continued interest is being manifested in the area of western and eastern operators.

Tioga Area—Tioga County: Allegany Gas Co.'s No. 2 Palmer, Lawrence Township, drilling at 3,375 feet; No. 1 Davey, Richmond Township, drilling at 170 feet; No. 1 Colgrove, Lawrence Township, location; No. 1 Learn, Farmington Township, drilling at 1,150 feet; No. 1 Manning, Farmington Township, building rig; No. 1 Smith, Lawrence Township, spudding in. Adams and others' No. 2 Adams, Charleston Township, drilling at 4,730 feet. Benedum-Trees' No. 1 M. P. Close, Lawrence Township, drilling at 980 feet; No. 1 West, Lawrence Township, drilling at 390 feet; No. 2 Farr, Lawrence Township, drilling at 2,100 feet; No. 3 Farr, Lawrence Township, location; No. 1 Tremaine, Lawrence Township, rigging up; No. 1 Harrington, Lawrence Township, drilling at 570 feet; No. 1 Decker, Lawrence Township, drilling at 1,750 feet.

Brooks Johnston's No. 1 Davis, Chatham Township, building rig. Cities Service Co. (Penn York Natural Gas Co.) No. 1 Hettick, location near Towanda, Pa., building rig. Harry Erwin and others' No. 1 Tioga County Poor Farm, near Wellsboro, Pa., rigging up. Hope Engineering Co.'s No. 1 Bertch, Brookfield Township, shut down. Leonard Drilling Co.'s No. 1 Harrison, Lawrence Township, abandoned. Lycoming Gas

(Continued on Page 68)

Central Ohio Has More Completions

Indiana and Illinois Fail to Report a Producer. Three Completions in Old Lima Field. Important Kentucky Test

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 27.—In the Central Ohio division, where the hunt for natural gas is going on, this area years ago developed some remarkably large gas wells, but those being brought in of late are rather small in volume, which means the drilling of a number of wells to get any sizable amount of gas. Twenty years ago one well would produce more than a dozen of the present day wells. Some expect an active drilling campaign in southeastern Michigan for gas, as it is found at very shallow depths. So far as development work has been done, the wells, while small, show remarkable staying qualities, for when a well less than 500 feet deep will supply fuel for a residence for 19 to 20 years, it means that gas is cheaper for fuel than cutting wood. Many shallow holes are producing gas for the same purpose found from 50 to 150 feet in depth. To reach the oil producing formations deeper wells must be drilled, the only real oil wells so far found in the extreme southeastern part of the State being those near Dundee in Monroe County, where the production comes from the Trenton limestone at around 2,100 feet.

The test on the Sanderson farm, NW Section 26, Augusta Township, Washtenaw County, about a mile northeast of Oakville, has a showing of oil at 155 feet in the Trenton at a total depth of 2,700 feet but it has a coup'e strings of tools in the hole and fishing for them has been under way for more than two months, without success so far. There are some hopes of recovery of the tools by C. W. Nason of Travers City, Mich., one of the oldest drillers in the country, 52 years a driller, starting in Pennsylvania, and a past master in fishing for lost tools.

Lima Field

Only three completions were reported from the old Lima Field of northwestern Ohio, two being light gas and the other a dry hole. Many old wells were reported abandoned in various areas of the large oil field.

In the Tiffin Field, Liberty Township, Seneca County, the Sandusky Gas Co. found a small gas well in No. 2 on the Wilson Betts estate, Section 34, and the same company brought in a small gas well in No. 2 on the George Doran farm, Section 3, Hopewell Township, same county, and is drilling No. 1 on the D. S. Hostler farm, same section.

Gebhart, Fraker and others, drilling a wildcat on the Garrett Verberg farm, Section 2, Fitchville Township, Huron County, got a nice volume of gas from 330-35 feet, but it proved to be a flash, and the well was drilled to a total depth of 1,049 feet, where it proved dry in what is supposed to be the Niagara formation.

Harpster and others are reported as starting a test on the Lewis C. Beis farm, Section 11, Crawford Township, Wyandot County. Jeffries and others were down in the Trenton from 1,300-40 feet in a second test on the George P. Jones farm, Section 24, Crawford Township, same county, but reports no showing at that depth.

Near Elmore, the Sugar Creek Oil Co. is starting a test on the H. Klingbiel farm, Section 24, Harris Township, Ottawa County, the outcome watched with interest owing to its location. Sheldon and others are drilling No. 1 on the Frank Kritzler farm, Section 13, Cessna Township, Hardin County. Jones & Coyle are drilling on the Charles Hoepp farm, Section 17, Tymochtee Township, Wyandot County.

Wells Abandoned

For the week a total of 52 old-time producing wells were abandoned in the Lima Field, 43 being in Wood County and 9 in Sandusky County. In the Wayne or Prairie Depot, Montgomery Township, Wood County, the Ohio Oil Co. pulled out Nos. 22, 23, 27, 31, 33, 38, Holliday & Hamilton farm, Section 9; Nos. 29 and 30 Holliday & Hamilton farm, Section 16; Nos. 4, 5, 6, 7 and 8 A. L. Bordner farm, Section 9; Nos. 2, 3, 4 and 5 G. W. Butler farm, same section, and Nos. 3, 4, 6, 7, 9, 12, 13 and 14 on the J. Adams south farm, also in Section 9. In Freedom Township, same county, the Ohio company abandoned Nos. 5, 13, 15, 22, 39, 53, 58, 98, 103, 104, 114 and 115 Fuhr & Villwock farm, Section 33, also Nos. 1, 2, 3, 4, 6 and 8 S. E. Tilton farm, same section.

In Sandusky County, Madison Township, the Ohio Oil Co. abandoned Nos. 1 and 2 Ed Davis farm, Section 19, also No. 1 on the H. Myers No. 2 farm, same section. In Scott Township, the North Ohio Oil Co. abandoned Nos. 1, 2, 3, 4, 5 and 6 J. D. Hathaway farm, Section 6.

INDIANA AND ILLINOIS

No completions were reported from the Indiana Field, or from Illinois. In Hamilton County, Indiana, James McMahon Co. is starting a test on the Graham farm, near the Edwards well and approximately 5 miles west of Cicero. Defiance Oil & Gas Co. is drilling on the Richard C. Lake farm, Section 10, Jefferson Township, Elkhart County, in the north end of the State. W-B Oil Co. is drilling close to the St. Peter sandstone on the William McKensen farm, Section 19, Hendricks Township, Shelby County. Cato Oil & Gas Corp. is drilling a second test on the Everett Crow farm, Section 25, Patoka Township, Pike County.

CENTRAL OHIO

The Central Ohio Field shows a slight increase in completed wells but the new locations and drilling wells were not as active as the past week. This is only a lull in the work, as the bulk of the drilling operations are for gas, the oil being secondary, and the good weather will eventually show increased activity within a short time.

In Ashland County the Ohio Fuel Gas Co.'s No. 2-5,469 Royal J. Welsch farm, Section 1, Orange Township, is a gas well. Same company has a rig in for No. 2-5,490 on the Samuel and David Applegate farm, Section 30, Vermillion Township.

In Medina County, Chatham Township, Edson and others' No. 13 Archie E. Packard farm, Lot 6, is credited with an initial production of 5 bbls., from 311 to 377 feet. Barnhart and others have a light gas well on the P. A. Frissinger farm, Section 16, Homer Township, from 2,783-88 feet.

In Lorain County, Columbia Township, Ohio Fuel Gas Co.'s No. 2-5,486 C. E. Lehman farm, Lot 73, is at a depth of 584 feet. Barnhart and others are drilling No. 1 George Elser, Section 4, Chester Township, Wayne County.

In Wayne County another completion was reported from Congress Township, where the Ohio Fuel Gas Co. has a gas well in No. 1-5,473 on the W. N. D. Jones, Section 6.

In Cuyahoga County, Strongville Township, Dillon & McFredericks have a dry hole on the W. C. Fetterman farm, Lot 58, from 3,082 to 3,102 feet.

In Knox County, Upham Gas Co. is drilling on the Frank Magers farm, Lot 17, Howard Township.

In Coshocton County, Perry Township, the Preston Oil Co.'s No. 1-1,477 W. A. Little farm, Section 17, produced 6 bbls. from 3,075 to 3,123 feet. Same company's No. 1-1,478 Charles O. Mercer farm, Section 5, same township, was dry from 3,228-73 feet, and is drilling No. 1-1,483 Howard Wilt farm, Section 6. Same company is drilling No. 1-1,480 William Frazee farm, in the southwest quarter of Newcastle Township, same county.

In Summitt County, Green Township, the last report from the test of Eagon and others on the Katherine Selser farm, Section 7, had reached a depth of 3,970 feet. In Franklin Township, East Ohio Gas Co. is drilling No. 2 S. and K. DeWalt, Section 25.

In Muskingum County the Pure Oil Co. is drilling a test on the E. J. Hunkins, Section 6, Jackson Township.

In Athens County, Lee Township, the Letonia Oil & Gas Co.'s test on the Lizzie Robinet, Section 19, is a duster at 1,132 feet. Chartiers Oil & Gas Co. made a location on the Dora Wilson, Section 17, York Township.

In Stark County, Jackson Township, the East Ohio Gas Co. has a nice gas well in a second test on the T. K. Harris, Section 34, at 4,517 feet, also drilled in another gas well on the Tom O'Shanter golf course tract, Section 26, same township, at a total depth of 4,433 feet. Medford Oil & Gas Co. made a location for No. 2 on the John C. Easterday, Section 35, same township.

In Belmont County, Somerset Township, Gibson, Bradfield and others are drilling on the John Patterson estate, Section 32.

In Fairfield County, Richland Township, Patton & Bishop are drilling on the Clay H. Shaw, Section 32, the drilling being done by daylight.

In Athens County, Porter Brothers' No. 10 Hocking-Athens Coal Co. farm, Section 17, has been abandoned at 3,274 feet, neither the gas nor oil of a quantity to pay for tubing.

In Meigs County, Bedford Township, the Ohio Fuel Gas Co. has a very light well in No. 1-5,476 Bertha M. Carl, Section 27, at a depth of 1,612 feet.

In Holmes County, Washington Township, the Ohio Fuel Gas Co. has a dry hole in No. 1-5,371 Clark Miller farm, Section 11.

In Athens County, Bode and others report a 5-bbl. producer in a second test on the P. R. Devore farm, Section 23, Waterloo Township, at 1,075 feet.

William Cline and others are drilling on the Howard H. Doyle farm, Section 3, Clay Township, Muskingum County.

KENTUCKY

One of the more important tests for some time in western Kentucky is Ellis and Young's well about a mile west of the hamlet of Island in the southeastern part of McLean County. It was drilled to a total depth of 3,520 feet, where it showed for an oil well, but water drowned out the oil and an attempt was made to make it a gas well in the black shale by a shot with an expectation of getting at least 1,000,000 feet. Instead, the gauge showed but 77,000 feet. This is the first well to be shot in the shale in the field and is of little value.

Brenner, Adams and others' No. 1 on the Martha Medcalf 44 acres in Ohio County is reported with an initial of 7 bbls. from a total depth of 400 feet.

In the Greenville Field, Muhlenberg County, the H. & K. Producers Co.'s No. 2 H. F. Lee farm, near the town of Weir, produced an initial of 25 bbls. at a depth of 794 feet. Same company found a dry hole in No. 1 on the H. Roe farm, also near Weir and south of Greenville, in the McCloskey sand at a depth of 1,610 feet.

Eastern Kentucky

Raydure, Benton and others' test on the Delina Bishop farm, District 8, Estill County, in the Eastern Kentucky Field, is a fair gas well.

James G. Cooper's No. 6 Robert Day farm, District 18, Lee-Owaley County, is credited with a production of but 1 bbl. initial.

Garrison & Townsend's No. 23 on the C. K. Dobyns farm, District 22, Lawrence County, produced 5 bbls. the first 24 hours.

Reports from the Prestonburg Field, of Floyd County, are that the Southeastern Gas Co. has four new gas wells on No. 2 Kate Allen farm, No. 2 M. F. Preston farm, No. 1 Collins farm and No. 8 Isaac Bradley farm. In this area gas is found in four sands, the Big Lime, Salt sand, Berea and Brown shale formations.

Ellis and Young have a well down to 2,500 feet near Rochester, in Butler County, which has been under way since December, the drilling being done slowly to feel out the various formations.

George Trout, Cooper and others are starting a well in Taylor County, where the same formation should be found as that in Metcalf, Hart and other nearby counties. Simpson Brothers will do the drilling.

Ellis & Young report a test down around 1,550 feet, about 3 miles from Clarkville, in Montgomery County, Tennessee, the drilling being done by Stimson Brothers. This is just south of Todd County, Kentucky, and mighty close to the structure often mentioned in Todd County.

FEDERAL PRORATION HEARING

Federal Court hearings on oil proration in Oklahoma will be resumed in Guthrie May 1 when three Federal judges hear the injunction suit of the Sinclair Oil & Gas Co. against the corporation commission.

Date for the hearing was set by Franklin E. Kennamer, Federal judge of the eastern district, who designated John H. Cotteral and George T. McDermott, judges of the Tenth Circuit Court of Appeals, to hear the case with him.

The Sinclair suit is brought in an effort to raise existing proration orders and is based on a different legal premise from the recent Federal Court suit in which the system of proration was upheld as constitutional.

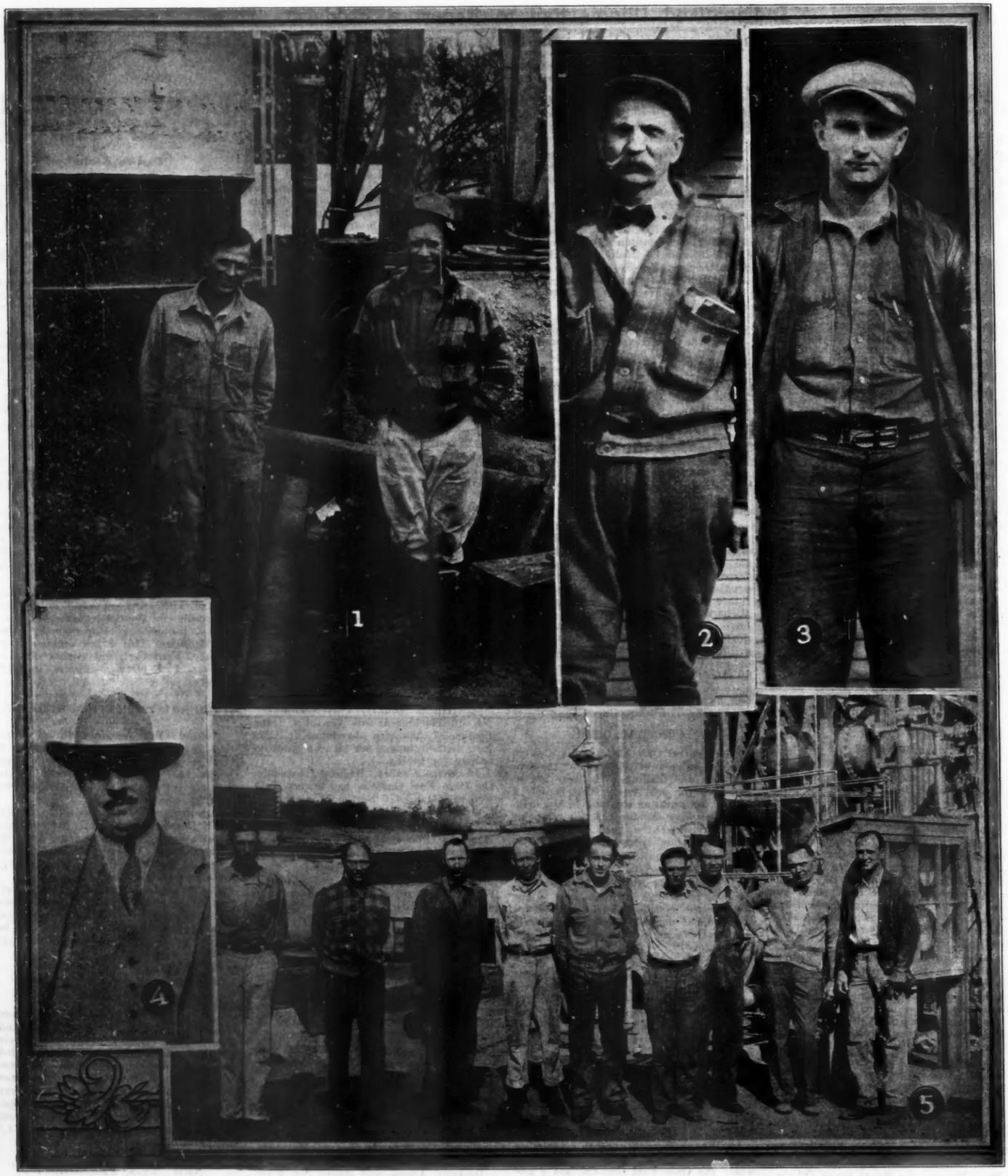
SHALE FOR SWEDISH NAVY

A committee appointed last June from the Royal Swedish Board of Trade and the Naval Administration to investigate the shale oil industry has recommended that the Swedish government purchase the plant at Kinnekulle. The committee considered the maintenance of the plant to be of vital importance to the Swedish navy, which in peace times requires oil for various vessels at a cost of about 1,000,000 crowns a year.

NEW A.C.S. PRESIDENT

Dr. L. U. Redman, president-elect of the American Chemical Society, will take office January 1, 1932. He succeeds Prof. Moses Gombero of the University of Michigan. Doctor Redman lives at Bloomfield, N. J.

Caught at Leisure Moments by The Journal's Cameras



1—T. A. Robinson, production department, Patton Oil Company, Oklahoma City, Okla., and P. G. Sperry, production department, Wilcox Oil & Gas Company, Oklahoma City, Okla. 2—L. S. Edgett, plant foreman, Carter Oil Company's Teewee gasoline plant, Little River, Okla. 3—Clyde Randles, chief engineer, Carter Oil Company's Teewee gasoline plant, Little River, Okla. 4—Stephen F. Day, representative, The Barrett Company, Houston, Tex. 5—Left to right: J. C. Shuffler, engineer; O. L. McElroy, repairman; W. H. Winnegar, line walker; Swede Anderson, repairman; Sam Bamber, laborer; B. L. Robertson, repairman; Ham Hebner, plant operator; C. S. Bronstad, superintendent; and C. A. Peairs, chemist, Texas Pacific Coal & Oil Company's gasoline plant, Caddo, Tex.

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B.S.&B. Perfection

Vapor Pressure **TANKS**

"A penny saved is a penny earned," is an old adage. When you store your crude in these tanks it stays there, until emptied into the pipe lines. As much as 5 barrels per day, in a 250 barrel tank, has been a tested evaporation loss. Consequently such savings of your crude is a definite daily dividend!

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Speaking of time, the B S & B SAFETY STEEL WALKWAYS AND STAIRWAYS defies it! They are fire-proof; rot-proof, and resist the elements. Portable, practical, adjustable, and "as easy to erect as the building toys."

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BARTLESVILLE ~ OKLAHOMA

Our Watchword QUICK S.E.R.V.I.C.E.

Personal Paragraphs About Oil Men

Campbell Hunter, geologist, of London, England, is spending a few weeks in the Alberta fields.

* * *

Albert Gibson left Petrolia, Ontario, recently en route for the Burma fields after a few months' furlough.

* * *

Walde Sheldon, president of the Sheldon Machinery Company, New York, has returned to his headquarters following a several weeks' visit to the Houston, Tex., offices of the company.

* * *

C. C. Pope, scout and land man for the Sun Oil Company, with headquarters in San Angelo, Tex., has been transferred to the East Texas district temporarily.

* * *

Charles Bradley, formerly scouting out of Colorado, Tex., for The Texas Company, has been transferred to the East Texas district and will headquarter at Tyler.

* * *

C. T. Scott, of the land department of the Blackwell Oil & Gas Company, has been transferred from Cushing, Okla., to Longview, Tex., where he will be in charge of the land department.

* * *

W. G. Loomis, for several years assistant sales manager of the Oklahoma Natural Gas Corporation merchandise department, Tulsa, has joined the Pittsburgh Water Heater Company.

* * *

Earl M. Pinckard, scout for the Pure Oil Company, Southwest Texas district, Houston, has been transferred to Corpus Christi, Tex., out of which he will cover the lower Gulf Coast district.

* * *

C. L. Brockschmidt, for four years with the Lone Star Gas Corporation, Dallas, Tex., as combustion engineer, has resigned to accept a position with the Mississippi River Fuel Corporation, St. Louis, Mo.

* * *

Charles P. Dimit, general superintendent of production for the Phillips Petroleum Company with headquarters in Bartlesville, Okla., is visiting in the Texas Panhandle on his first trip of inspection since assuming that position.

* * *

Frank B. Martinek, Chicago; W. G. Helsel, general superintendent, Tulsa; and J. B. Harshman, master mechanic, Tulsa, all with the Stanolind Pipe Line Company, have been making a general inspection trip of company lines in Texas and visiting the East Texas fields.

* * *

Dr. Charles Camsell, deputy minister of mines for Canada and for many years associated with geological work in the Canadian West, has been awarded the 1931 gold medal of the British Institution of Mining and Metallurgy in recognition of his services in promoting the development of the Canadian mining industry and Canada's natural resources. Doctor Camsell is the second Canadian to be thus honored.

* * *

William Cole, of Byron Jackson Company, and Jack Becker, of Bailey & Becker, are basking in the limelight of interest as the result of the arrival at the home of Mr. Cole of a baby girl who has been named Lola Jane Cole. The arrival places Mr. Becker in the grandfather class, he being Mr. Cole's father-in-law. As Mr. Ripley might say: "Believe it or not."

* * *

Wallace Lee, consulting geologist at Okmulgee, Okla., and John Nesbit, a member of the geological department of the Empire Oil & Refining Company, at Bartlesville, Okla., have been nominated for the position of district representative of the Tulsa Geological Society, to the American Association of Petroleum Geologists, to succeed Frank R. Clark, of the Mid-Kansas Oil & Gas Company, who was elected second vice president of the national organization at San Antonio, Tex.

Donald C. Barton, consulting geologist, Houston, Tex., accompanied by his wife, motored to the Rio Grande Valley for a short pleasure trip.

* * *

Clint Kimbro was elected a director of the Texas Pacific Coal & Oil Company, succeeding the late Thomas R. Hall, at the last annual meeting.

* * *

C. A. James, assistant to the manager of the production department, Vacuum Oil Company, Houston, Tex., spent several days in East Texas, visiting the new fields in that district.

* * *

B. E. Hull, president of the Texas Pipe Line Company, Houston, Tex., has returned to his office from a business trip to New York and other eastern points.

* * *

C. A. Owens, first chairman of Governor Murray's oil conservation board, was visiting in Tulsa during the week after spending a few months in California and Texas.

* * *

Jim Murray, of the Murray Tool & Supply Company, is now using an automobile since his airship burned a few months ago. During the last two years Mr. Murray has visited all the important oil fields by plane.

Men of the Industry

John J. Mitchell, Jr.

Although his active interest in the oil business began about three months ago, John J. Mitchell, Jr., vice president and treasurer of Universal Oil Products Company, had been hearing about it ever since he was a boy. Mr. Mitchell succeeded R. J. Dunham in the Universal organization when Mr. Dunham stepped out following the sale of Universal's stock last January.

Mr. Mitchell's father, John J. Mitchell, was one of the founders of The Texas Company and was for many years president of the Illinois Merchants Trust Company of Chicago. He also was the trustee of the Gates estate, was a large stockholder in The Texas Company and was active in that company's affairs until his death in 1927.

Through his association with his father, the younger Mr. Mitchell has long been familiar with the history and affairs of The Texas Company. Before associating himself with the Universal Oil Products Company Mr. Mitchell was assistant to the vice president of the Illinois Merchants Trust Company.

C. J. Tighe, an engineer with Sinclair Oil & Gas Company at Seminole, Okla., was married at Seminole to Miss Eunice Hunter, of Shawnee, Okla., April 18.

* * *

William Lamprecht, vice president of National Refining Company of Cleveland, Ohio, has been visiting the Coffeyville, Kans., plant, which is being enlarged.

* * *

Charles E. Enlow, who for the past 10 years has been connected with the Transcontinental and Continental Oil Companies in Texas, has resumed the practice of law.

* * *

John R. Suman, director of the Humble Oil & Refining Company, Houston, Tex., made a short trip to McAllen, Tex., and the Rio Grande Valley, going by airplane.

* * *

W. K. Prunty, of Prunty Drilling Company of Ponca City, Okla., is inspecting the country around Boise City, Idaho, where the company has a contract to drill a wildcat well.

* * *

Daniel J. Moran, president of the Continental Oil Company, accompanied by directors of that concern, recently completed the annual survey of Continental's properties in California and left Los Angeles for the East.

* * *

Roy A. Reynolds, consulting geologist of Fort Worth, Tex., has returned from a reconnaissance trip through Italy, Czecho-Slovakia, Austria, Hungary and Germany. The trip was made in conjunction with J. Elmer Thomas and others.

* * *

R. G. Bechtel, Michigan Field superintendent for the Stanolind Oil & Gas Company, subsidiary of the Standard of Indiana, has left Muskegon for a two months' stay in the East Texas oil fields. J. A. Grant and D. E. Heasley have also been transferred to East Texas.

* * *

J. W. McCulloch, formerly vice president of the Independent Oil & Gas Company, has formed the McCulloch Oil Company at Tyler, Tex., with Villard Martin, formerly chief counsel of the Independent Oil & Gas Company, and J. J. Hull of Okmulgee, Okla.

* * *

B. F. Fairless, executive vice president; N. Clark, vice president in charge of sales; J. M. Schlendorf, sales manager; and E. C. Smith, assistant works manager, Canton and Massillon division, all Republic Steel Company officials, are in Houston, Tex.

* * *

R. B. Harkins, formerly with the Oklahoma Natural Gas Corporation, Tulsa, has taken a position with the Panhandle Eastern Pipe Line Company, Kansas City, Mo. Mr. Harkins had been with the Oklahoma Natural for seven years. He will make his new headquarters in Fritch, Tex.

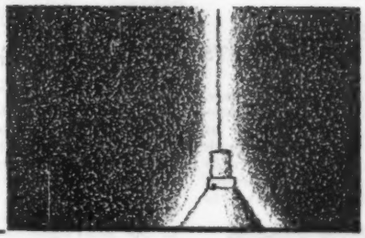
* * *

H. L. Pratt, chairman of the board of directors of the Standard Oil Company of New York, spent several days in Los Angeles, Calif., as the guest of J. A. Brown, president of the General Petroleum Corporation, a subsidiary of Socony. Mr. Pratt, on his inspection tour of California fields, was accompanied by T. S. Fales, vice president of the Standard Oil Company of New York, and president of the Standard Transportation Company.

* * *

Edward L. Beamon, who has been in charge of the motor testing laboratory of the Bayonne refinery of Tide Water Oil Company, has been transferred to the sales engineering division of the Tide Water Sales Corporation, with headquarters in New York. The force of the motor testing laboratory, at a testimonial dinner to Mr. Beamon following his promotion, gave him a brief case. Philip G. Colin has been placed in charge of the motor testing laboratory at the plant, succeeding Mr. Beamon.

No. 6 RED Tnemec



APPROVED BY EXPERTS

AS A PRIMING COAT ON STEEL SURFACES

Read What these Well-Known Authorities Say

Investigating Committees of Architects and Engineers, R. M. Hooker, General Secretary, New York City, in the Official Bulletin of Approved Products reported that Tnemec Paint applied on steel surfaces already covered with incipient rust, bonded firmly to the steel surface and stopped the rusting action.

William Judson Gray, Consulting Engineer, Springfield, Mo., says: "I have used many brands, but yours has been an outstanding success. The film of cement coating which Tnemec gives the surface is indeed one of the greatest rust-inhibitive agents known today."

Dr. H. A. Gardner, Director, Scientific Section, Paint Manufacturers of the United States, and Assistant Director of the Institute of Industrial Research, Washington, D. C., in "Paint Researches and Their Practical Application," page 102, line 11, says: "There should, however, be present in a paint a sufficient quantity of rust-inhibitive pigment, to produce a passive condition of the steel, similar to the condition that is produced by the basic lime compounds in portland cement."

80% of the Pigment of Tnemec is Portland Cement

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CONTINENTAL

Oil Industry Equipment and Supplies

"BUTTONHOLE TAPE" IS MATERIAL FOR GASKETS

Garlock 616 Buttonhole asbestos tape, for use as a gasketing material on large-diameter flanged tanks, etc., is made up of two parallel courses of high-grade folded asbestos cloth joined together by a single ply of bonding fabric. As shipped from the factory of the manufacturer, the

Garlock Packing Co., Palmyra, N. Y., it contains no holes. The insertion of a knife blade between the two parallel sections of the tape cuts the bonding fabric, forming a buttonhole which slips readily over the bolt or stud. With no tools other than a knife the workman can make a gasket which will remain in place, fit correctly, lie flat and form a positive seal around every bolt.

Ordinarily these buttonholes are cut as the tape is applied. This avoids waste and possibility of errors in measurements. In some instances, however, it may be desirable to cut the holes at the bench before applying the tape to the flange. Still further to simplify the work when so handled, the tape is furnished printed with 1-inch graduation marks.

For joining the two ends of buttonhole tape to complete the gasket, a step joint is recommended. To finish these joints they should be wrapped with friction tape from the roll which is provided with the tape. Garlock 616 buttonhole tape is manufactured in coils of any desired length, and in all regular widths and thicknesses. Patent has been applied for.

NEW PREST-O-WELD BLOWPIPES

The Linde Air Products Co., 30 East Forty-Second Street, New York, has added two new welding blowpipes to its line of Prest-O-Weld medium pressure apparatus, presenting an entirely new idea in blowpipe design. A detachable valve body, to which the handle is secured by a simple and convenient locking device, enables the operator to change quickly from the standard to different handles without detaching hose or hose connections and without the use of a wrench. Designated as the Prest-O-Weld type W-105 and type W-106, these two new additions to the line have been designed to give Prest-O-Weld users a medium pressure blowpipe comparable in range to the Oxweld type W-17.

MERGER IS ANNOUNCED

Announcement is made of the affiliation of the American Radiator & Standard Sanitary Corp. with the Cochran-Sargent Co., St. Paul, Minn. The Cochran-Sargent Co. is to be operated under its present name as a division of American Radiator & Standard Sanitary Corp., without change in either official personnel or policy.

AMONG THE EQUIPMENT HOUSES

Theodore Marvin has been appointed advertising manager of Hercules Powder Co., Wilmington, Del., succeeding the late Nelson S. Greensfelder.

George B. Morris, president of the Bradford Motor Works, is making a tour of the Mid-Continent Field accompanied by the sales representatives.

The Chain Belt Co., Milwaukee, Wis., has moved its Buffalo, N. Y., office from 753 Elliott Square to 1807 Elmwood Avenue. T. E. Cocker is the district manager.

The Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., has moved its New York office from 50 Church Street to 270 Broadway. Howard W. Ford continues as district sales manager.

Sales of Federal trucks for March showed a 50 per cent increase over February, according to Henry Krohn, vice president, in charge of sales of the Federal Motor Truck Co., Detroit, Mich.

The Lufkin Foundry & Machine Co., Lufkin, Tex., has established its Los Angeles branch office and warehouse at 5959 South Alameda Avenue, with Fred E. Yeager as field and service man and E. P. Trout in charge of sales. The Bakersfield warehouse is retained.

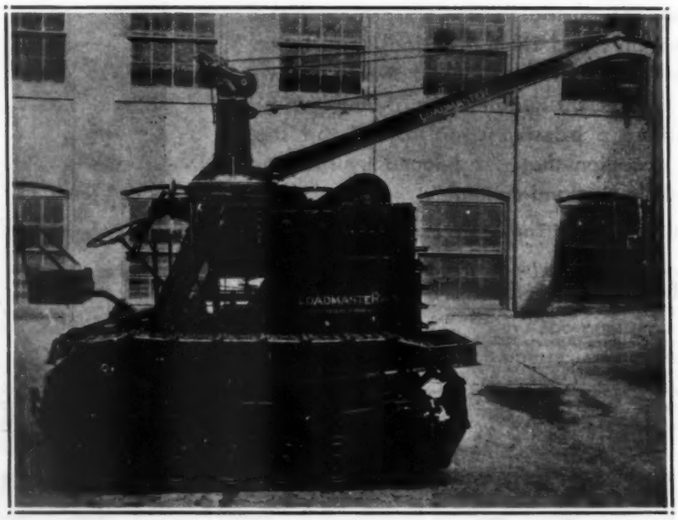
G. W. Moore, Byron Jackson Co., sales representative, plans to drive from Tulsa through the Rocky Mountain region and thence via Montana to Canada, where he will be stationed during the summer months, with the National Supply Co., Calgary, as his headquarters.

Orders received by the General Electric Co. for the first quarter of 1931 amounted to $60,366,297, compared with $90,397,731 for the corresponding three months of last year, Gerard Swope, president of the company, announced at the annual meeting of stockholders.

SHORT CENTER DRIVE

A development in power transmission has been announced by the Rockwood Manufacturing Co., Indianapolis, Ind., (division of General Fibre Products, Inc.) with the introduction of the Rockwood short-center flat belt drive, now available in stock drives from 1 to 50 horsepower. The drive comprises a motor base, two pulleys and a flat leather belt. The stock drives are designed for polyphase 60 cycle A. C. motors of any make. The motor is mounted on a free-swinging pivot. Automatically the force of gravity—the weight of the motor—maintains uniform belt tension. The correct belt tension, once established for any drive, is unchanged by belt stretch or by centrifugal force. Uniform belt tension is said to assure constant pull and constant speed, resulting in full, uniform delivery of power, with maximum efficiency.

REVOLVING CRANE HANDLES UNWIELDY OBJECTS EASILY



To meet the need for a revolving crane on crawlers, the Loadmaster crane, manufactured by Frederic H. Poor, Inc., New York, has been adapted for use with the Model GH Trackson McCormick-Deering. This unit provides a convenient and economical method of lifting, carrying, and spotting heavy weights or unwieldly objects. It is suited to pipe line work and similar operations in the oil and gas fields, because of its ability to go wherever it is needed. The wide, ground-gripping Trackson crawlers provide sure footing and positive traction in soft, loose sand; slippery mud or clay; swamp land; steep grades, etc.

The full-revolving feature, together with the flexibility and easy maneuvering of the Trackson McCormick-Deering, enables the operator to spot and pick up the load quickly and to place it accurately. The bullwheel for swinging the boom is power-driven, and is equipped with a brake so that the boom may be set at any angle desired over the front or sides of the tractor. The speed of the boom's swing is controlled by the operator.

With the standard 10-foot boom the Loadmaster has a maximum lifting height of 12 feet 4 inches under the hook; with the boom lowered, it has a maximum outreach of 10 feet from the center of the mast in any direction.

MEN KNOWN *in* THE EQUIPMENT FIELD

George G. Landis, recently made chief engineer of the Lincoln Electric Co., Cleveland, Ohio, manufacturer of "Stable-Arc" welders and "Linc-Weld" motors, is a graduate of Ohio State University in electrical engineering. Upon receiving his B.S. degree he entered the employ

George G. Landis

of the General Electric Co., designing small motors. He later went to the Westinghouse Electric & Manufacturing Co. as sales engineer for central station equipment.

Mr. Landis went to the Lincoln Electric Co. eight years ago when he was placed in charge of the company's experimental activities. He later was placed in charge of electrical design of both motors and arc welders, and afterward was given charge of mechanical design. Many of the patents held by his employers, both on arc welding equipment and electric motors, are the result of his efforts. He is a member of Eta Kappa Nu, honorary electrical engineering society, and Theta Psi, honorary scientific society.

DRUM CLEANER AND DEDENTER

The Watson-Stillman Co., Roselle, N. J., has added to its line of barrel-house equipment a new machine which dedents, cleans and tests steel drums in one operation. The drum to be reconditioned is rolled from the back rack onto the rocker saddle, clamping heads are tightened and a flexible hose is connected to the bung-hole bushing with a quick-locking coupling. An alkaline solution from the sump is pumped into the drum. The pump then builds up hydraulic pressure as indicated on the gauge to dedent and at the same time test the drum. To complete the operation, the pump is by-passed by the three-way valve, hose is disconnected, clamping heads are released and the rocker saddle is tripped by the foot pedal, allowing the drum to roll onto the rack to drain to sump. The solution is used until its strength is spent.

The Gardner-Denver Co., Quincy, Ill., has published a bulletin, P-36, covering high-pressure steam and power pumps, designed for oil, water, line work, mud or slush, and severe service of all kinds.

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PPLY COMPANIES

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

IN CASE OF WELL FIRE WHAT?

I would appreciate such answer as you may be able to give on the following questions:

1. In case of a fire in the cellar or around the christmas tree of a flowing well should the flow be stopped if no immediate danger of ignition at the flow tanks exists, or should the flow be permitted to continue to keep the fittings at the well cool and lessen the probability of their failure?

2. Should a well not flowing at the time of a fire ever be opened and be permitted to flow to the tanks after it has been definitely ascertained that the control gate has not been damaged by fire and could be operated?—J. J. F.

Your questions have been submitted to production men, firefighters and valve manufacturers, and the answers given here represent the consensus of opinion. It will be necessary first to specify definitely the type of fire considered in Question No. 1 and limit it to an ordinary oil fire in a cellar where air can reach from both manway and gas outlet:

It will be necessary also to consider the effect of this fire upon the lower valve or master gate only, because this is the critical point in the fittings in the well and it is assumed that this was the valve you had in mind in Question No. 1 where you say "In case of a fire in the cellar." If the christmas tree fittings are also to be considered the size of the fire and other conditions become somewhat involved, but the general principles outlined below should apply equally well to fittings above or below the derrick floor.

It is assumed next that the well in question is of the high-pressure large-volume type, and no consideration is given to the effect which sand produced with the oil and gas would have upon the valves and fittings. Sand produced in large quantities under high velocities would have to be considered if the well is left open while the oil burns out in the cellar.

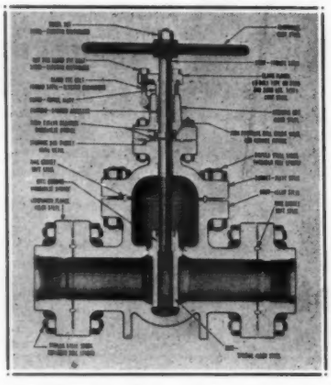
If these conditions are granted it is the opinion of the engineers and others with whom this question No. 1 has been discussed that it would be best to leave the master gate wide open while the fire is being exhausted. This is recommended because the cooling effect of the flow of oil and gas through this valve and the fittings would counteract the heat from the fire and actually protect the fittings.

This can be demonstrated by referring to page 602 of Kent's Mechanical Engineer's Handbook, tenth edition, where a table gives the thermal conductivity "K," of liquids and salt solutions, in B.t.u. per square foot per inch thickness per degree Fahrenheit difference in temperature. This table shows that the "K" value for petroleum oil is 1.0302 at 55.4° F. and the "K" value of water at 52° F. is 4.2659.

This indicates that at these temperatures it would require about four times as much oil as water to have the same cooling effect on these fittings, but this is not a complete comparison because other conditions would have to be considered, but it is sufficient to show that oil and gas flowing through the flow string and fittings at the top of the well would have a definite cooling effect.

M. M. Kinley, of Tulsa, who has extinguished gas and oil fires in many fields in this and foreign countries expresses the opinion that it is best to fight a cellar fire with the gates all wide open because it is dangerous to fight a fire when the flow string is under more than the flowing pressure of the well and when the fire is out repairs can be made only with the well flowing.

It was pointed out that while the cooling effect of the oil flowing through the valve would be greatest in the valve body, it might be possible to destroy the gasket and packing in the stem stuffing box and between flanges by the heat from the flames in the cellar. It is estimated that this heat will vary from 1,000 to 3,000° F. and probably average around



2,300° F. These temperatures would probably have this range because the lowest temperature will be due to the cooling effect of the air drawn into the cellar through the manways, while the 3,000° F. temperature is that of an oil flame of this kind. The average of about 2,300° F. will probably be quite conservative to use in making estimates of heat transfer under such conditions. If a temperature of 2,300° F. is maintained around the modern high pressure master gate or drilling-through valve there is little danger of leak in flanges or stem.

The accompanying illustration shows a 3,500-pound pressure master gate of the new type. Note the soft steel ring gasket used between flanges and between bonnet and body of the valve, and note too the braided asbestos packing around the valve stem. On the newest type valves of this kind 12 to 16 rings of this asbestos packing are used around the stems.

With this type of ring gasket in flanges and body and the great amount of asbestos packing around the stem it hardly seems likely that heat from an ordinary cellar fire would cause the master gate to leak. In all of this it is assumed that the well is not producing through chokes that would place a back pressure on the fittings regardless of whether the gates were full open.

Examination of fittings after cellar fires has not shown that the temperature of the fire has been sufficient to damage the steel or metal making up the valves, and taking this and the other points mentioned into consideration it would seem preferable to open the master gate and all other valves on a well if there was a cellar fire and keep them open while fighting the fire.

To the second question, in which you ask whether it would be advisable to open the gates at the well if a fire started while they were all closed, a majority of answers were "yes." This is recommended because it will relieve pressure on the flow string and lessen the danger of valves and fittings failing. The reasons in this instance are the same as those given for case No. 1.

It is possible to prove definitely the cooling effect of oil and gas flowing through fittings under the conditions described if all factors are known, such as rate of production of well, pressure at casinghead, type of fittings used, amount of oil in cellar and other conditions affecting the size and length of time fire burned. The problem is one of heat transfer and as such, with the required factors known, it should be possible of close solution.

WHY WAS IT CALLED THAT?

CLUB MAN

"Club man" is the self-explanatory designation applied to a member of a pipe line connection gang who, equipped with a stout club, helps the stabber in aligning a joint of pipe with the one to which it is to be screwed.

BEBEE FIELD GEOLOGY

Can you tell me where I can get a geological map and a geological report on the Bebee Field, Pontotoc County, Oklahoma? I would appreciate information regarding material dealing with the why and wherefore of gas pressure.—P. G. B.

Bulletin 40-S, issued by the Oklahoma Geological Survey, covers "Geology of Pontotoc County," by R. A. Conkling, December, 1927. It contains 27 pages, with one plate and five figures. The price is 30 cents. Bulletin 40, issued by the survey, covers the geology of the entire State. It is published in three volumes and costs $7.50. Either or both may be obtained by addressing Dr. Charles N. Gould, Director of the Survey, Norman, Okla.

A list of technical publications, including some on the subject of gas, is being mailed to you. It is suggested that you write to the Bartlesville Station, United States Bureau of Mines, Bartlesville, Okla., for its list of technical papers on gas.

PRORATION OF GAS ENERGY

Some friends of mine were discussing proration and one of them said one plan of proration now being considered was that of allotting each operator in a pool a certain share of the gas energy. This plan, he said, had been outlined in The Oil and Gas Journal. I only started taking the magazine about two months ago, and I have not seen anything about this plan. I would appreciate it if you would tell me how it is expected to operate such a plan and why it would be any better than prorating the oil production itself.—G. E. E.

The plan of prorating gas energy is offered by J. R. McWilliams, of the Skelly Oil Co., and it was discussed by him in an article published in The Oil and Gas Journal of November 6, 1930. In this article Mr. McWilliams said among other things:

"We must control the gas energy consumed in producing oil if we are to decrease underground waste, but this is not generally done under our present system of competitive extraction. Therefore, to remedy the situation it seems logical, although revolutionary, to propose that the gas energy of a common pool be prorated to each operator. This would allow the progressive operator an opportunity to produce as much oil as he could without jeopardizing the interests of others or being jeopardized by his neighbor's methods of development and operation. Since in all cases we produce only a percentage of the oil in a reservoir, if one operator produces more oil than another with the same amount of energy he has merely obtained through a greater efficiency a higher percentage of recovery from his property.

"The proration of gas energy could be effected within practical working limits in as much as the volume of gas produced is an indicator of the depletion of gas energy within the reservoir. And if the gas withdrawal from the field were retarded in such a manner as to render the mean reservoir pressure fairly constant over the whole area then the proration of the gas energy might be reasonably effected by limiting the gas volume each owner could produce from his wells.

"The actual working of the energy proration might be accomplished through the medium of some governing body which would hear the recommendations of the operators in the field and decide upon a specific volume of gas per acre of lease which each operator would be allowed to produce from the well or wells upon his property.

"Chief among the advantages secured by this apportionment of gas energy would be the greater ultimate recovery of oil from the reservoir. Further, there would be a stabilizing effect since the peak of flush production of both oil and gas would be flattened out and this would allow the physical waste of gas through blowing it into the air to be largely eliminated because the gas companies through the expectation of a steady gas production over a sustained period of time would be warranted in many cases in laying their lines into the field. Also, the oil production from the pool could be prorated to meet the demand by decreasing the percentage of gas proration without the necessity of taking potentials. Small tract operators would tend to unitize their holdings in order to secure a sufficient allocation of gas for the operation of their well or wells. Each owner by his method of development and operation would fix his own percentage of extraction. And the progressive owner would have an unhampered opportunity to increase the efficiency of his operations and an incentive to perfect still better methods."

MADE ENTIRELY OF STEEL

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READY-MADE
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The
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of Oil Field
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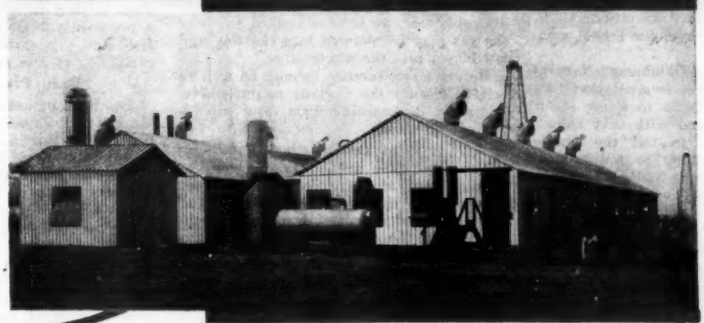

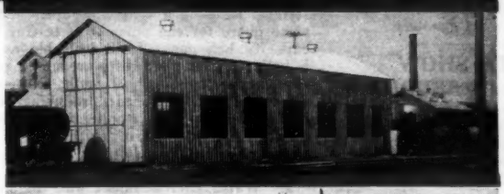

SINCE installing the Butler Steel Buildings shown here—

One owner has ordered additional standardized units with which to enlarge the original installation.

Another has taken the original installation down, shipped it to a new location and with additional standardized units re-erected it on a larger scale.

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Natural Gas Industry Developments

Knowledge of Working Of Business Stressed By Hendee at Norman

Courtesy and tact, with an all-around knowledge of his business, are of utmost importance to the natural gas employe, according to the address delivered at the college of engineering, University of Oklahoma at Norman by R. W. Hendee of Tulsa, vice president of the Oklahoma Natural Gas Corp., at the opening session of the eighth annual southwestern gas measurement short course.

Other speakers were E. F. McKay, manager of the Oklahoma Utilities Association; Dr. William Bennett Bizzell, president of the university; R. E. Miller, secretary of the National Gasoline Association of America; and E. J. Stephany, secretary of the Natural Gas Department of the American Gas Association. C. B. Day, chairman of the meter school committee, presided.

Referring to the Oklahoma Natural employes, Mr. Hendee declared that "we are learning all there is to know about our own company, and with that knowledge we are going to tell the public about it. We are going to tell anyone and everyone the truth and nothing but the truth." He pointed out that the success of a public utility depends upon the regard the public has for it, and that this regard is based on the attitude of individual employes. Continuing he said:

"The period of depression through which we are passing at the present time seems, to me, to raise the value of edu-

(Continued on Page 68)

GAS REVENUES SHOW DECLINE IN FEBRUARY

Revenues of manufactured and natural gas utilities aggregated $63,125,872 in February, 1931, compared with $69,274,925 in February, 1930, a decline of 8.9 per cent, according to reports from 317 companies serving 13,560,068 customers and representing nearly 90 per cent of the public utility distribution of manufactured and natural gas, it was announced by Paul Ryan, chief statistician of the American Gas Association.

The manufactured gas companies reported revenues of $32,801,815 for February, a drop of 4.3 per cent from a year ago, while revenues of the natural gas concerns totaled $30,324,057, or approximately 13 per cent less than for February, 1930.

Sales of manufactured gas reported for February totaled 31,398,298,000 cubic feet, a decline of 4.2 per cent, while natural gas sales for the month were 67,649,189,000 cubic feet, a drop of nearly 16 per cent. The more pronounced curtailment in natural gas sales was the result in part of the relatively larger proportion of industrial business handled by the companies, as natural gas sales for industrial purposes declined from 19,965,458,000 cubic feet in February, 1930, to 16,879,651,000 cubic feet in February, 1931.

This drop in natural gas industrial sales was most pronounced in the more highly industrialized states of the East and Middle West, the decline in such States as New York, Pennsylvania, West Virginia and Ohio averaging around 27 per cent.

The same tendency toward curtailment in industrial gas sales was also manifest, although to somewhat less extent, in territories served with manufactured gas. In the East, North, Central States, comprising Illinois, Indiana, Michigan, Ohio and Wisconsin, sales of manufactured gas for industrial purposes declined by nearly 18 per cent.

NEW METHOD OF DETERMINING OPEN FLOW CAPACITIES OF GAS WELLS

By E. C. Cortelyou
Production Department, Cities Service Gas Co.*

In the production of natural gas we have practiced some very wasteful methods of taking open flows; not that we believed in the methods used, but for the want of more efficient and up-to-date methods. During the past few years the United States Bureau of Mines has cooperated with the American Gas Association in the solution of many of its problems. The most noteworthy, from a production standpoint is the back pressure method of determining gas well capacities. In as much as the State Conservation Departments have adopted rules that specify that open flow capacity should be determined at definite intervals, usually monthly or quarterly, it is highly desirable that we have a method whereby the gas may be metered into the line and not blown into the atmosphere.

Before going farther, it may be well to briefly discuss the various methods now in use in determining open flow capacities of gas wells.

Pitot Tube Method

The pitot tube usually is the basis of measurement of open flow. The impact pressure of the gas being discharged from the producing string of pipe is observed and the volume corresponding to this impact pressure is obtained from a table which gives the rates of flow for the various impact pressures corresponding to the different size of producing strings. Blowing a well wide open to the atmosphere for the purpose of testing its capacity has never been desirable as it is believed that such tests are not a representative basis for all wells to determine their most efficient producing condition. However, its application is very simple. This method of testing wells is undesirable for the following reasons:

1. Excessive wastage of gas.
2. Water encroachment due to "caving" when the wells are opened wide.
3. Caving and bridging sand formation.
4. Fire hazards.
5. Danger of injuring employes who have to gauge large wells.
6. Accurate tests cannot be made on wells equipped with siphon lines.

Ninety per Cent Rock Pressure Method

The Indian Territory Illuminating Oil Co., which owns and operates some 300 wells in Osage County, Oklahoma, originated this method of gauging well capacities. It is now being used with the approval of the Indian Agency. In gauging wells by this method the rock pressure is taken, then the well is turned into the line at different rates of delivery and the back pressures noted of each rate. A curve is then plotted on regular co-ordinate paper with the back pressure plotted against the rate of flow. The rate of flow at 90 per cent of the formation pressure is taken from the curve and used as a basis for the maximum allowable rate at which the well should be produced, which is approximately 20 per cent of the open flow capacity of the well.

However, this does not hold true for gas wells in all parts of the country. The method is a forward step in the right direction in so far as it eliminates the necessity of opening the wells for pitot tube tests. Only 10 to 20 per cent of the back pressure needs to be relieved and the gas is measured at the normal flow condition in the sand.

Parsons Plan

During the latter part of the year 1928, C. P. Parsons of the Magnolia Petroleum Co. proposed a plan for determining open flow capacities of wells which was based upon data from the history of wells in the Chickasha gas field. Under this plan he determined the relation between the decline in rock pressure and the decline in open flow. This relation was a composite curve for all of the wells in the field and was arrived at by correlating data on 20 representative wells in the field. Therefore, with this curve as a basis the open flow could be computed by measuring the decline in rock pressure.

It has been found that this curve cannot be used in other fields as the sand and producing conditions vary. The principal difficulty encountered in using the plan is that it is necessary to establish a pressure volume decline curve for each field and this cannot be done during the early life of the field.

Back Pressure Method

The back pressure method of determining gas well capacities was originated by the United States Bureau of Mines and it has published two papers discussing the technical phases of this method of analyzing gas well capacities.

In order to gauge wells by this method it may be conducted in the following manner: First, shut in the well and obtain a reading of the shut in or well head pressure, then obtain four or five measurements of the rate of flow of gas from the well at each of the four or five corresponding back pressures. The back pressure on the well should be at least 80 per cent of the shut-in pressure at the maximum rate of flow. It is important that each reading be taken when the well has reached a settled condition. After calculating the actual pressure at the sand for each reading then plot on logarithmic paper the rates of flow on the abscissa against the respective difference between the square of the shut-in pressure at the sand and the back pressures at the sand face. When the data is plotted in this way the relation is represented by a straight line. The extension of this straight line on the logarithmic paper makes it possible to read directly the rate of delivery or open flow corresponding to the formation pressure.

During the past year Cities Service Gas Co. has made a practice of testing all of the high pressure wells to which its lines are connected by the back pressure method. During the month of November, 1930, a joint test was made on all of the wells in the Depew Field location in Creek County, Oklahoma.

The Depew gas field was discovered during 1925 and since then there have been some 30 wells completed in the gas producing horizon. The gas is being produced from the upper Dutcher sand, found at a depth of approximately 3,300 feet. On the date of the test there were 27 producing wells in the field.

The original formation pressure was 1,320 pounds, while on the date of the test the rock pressure was 510 pounds, which indicates a high degree of depletion.

Most of the wells were completed with 6⅝-inch casing, which is cemented, in most cases, about 100 feet above the sand pay. The edge wells on the structure were showing considerable water and many of them were tubed with 2-inch bleeder lines.

In making the back pressure tests no standardized method or procedure was followed; however, where possible, the readings for the high rates of flow were taken first. This was done in order to pull over the water and gasoline that had condensed in the bore of the well. The rates of flow in all cases were measured

(Continued on Page 68)

*Before Gas Division, Oklahoma Utilities Association, Bartlesville, Okla.

SOUTHERN NATURAL GAS FIRST ANNUAL REPORT

In the first annual report of the Southern Natural Gas Corp. total assets of the company are revealed to have been $42,130,675 as of the end of the year.

Current assets are reported at $2,733,367, as against current liabilities of $1,692,856. The largest single item of current assets is a subscription of $1,620,320 to the cumulative second preference stock of the company. Cash holdings are shown to be $177,552, while notes and accounts payable totaled $902,322. Fixed capital is shown to have a book value of $38,885,983.

The Southern Natural interstate transmission system extends from the Monroe and Richland gas fields in Louisiana, through Mississippi to Birmingham, Ala., and Atlanta, Ga., with branch lines to other cities in the territory; it comprises 1,250 miles of high pressure pipe lines and three modern compressor stations with a present installed capacity of 15,000 horsepower. It is primarily a transmission system, purchasing its entire supply and selling it, for domestic and industrial distribution, to local distributing companies and large industrial consumers. Natural gas is now being supplied to 43 cities having a total population of 1,100,000, distribution being effected through eight utility companies with which Southern Natural has contracts for the sale of natural gas. Large industrial concerns at present supplied by Southern Natural, or its distributing companies, under contract, include Tennessee Coal, Iron & Railroad Co. and American Steel & Wire Co. (both subsidiaries of United States Steel Corp.), Universal Atlas Cement Co., National Cement Co., Gulf States Steel Co., Chevrolet Motor Co., Atlanta Steel Co., Georgia Kaolin Co. and B. Mifflin-Hood Brick Co.

FORT WORTH GAS SITUATION

DALLAS, Tex., Apr. 27.—Officials of the Lone Star Gas Corp. reiterated the recent declaration of L. B. Denning, president of the company, that there was nothing in the Fort Worth situation that could affect the revenues or the service of the company in that city. Denning still holds to the belief that no other company will furnish service to Fort Worth.

TEXAS GAS TAX SIGNED

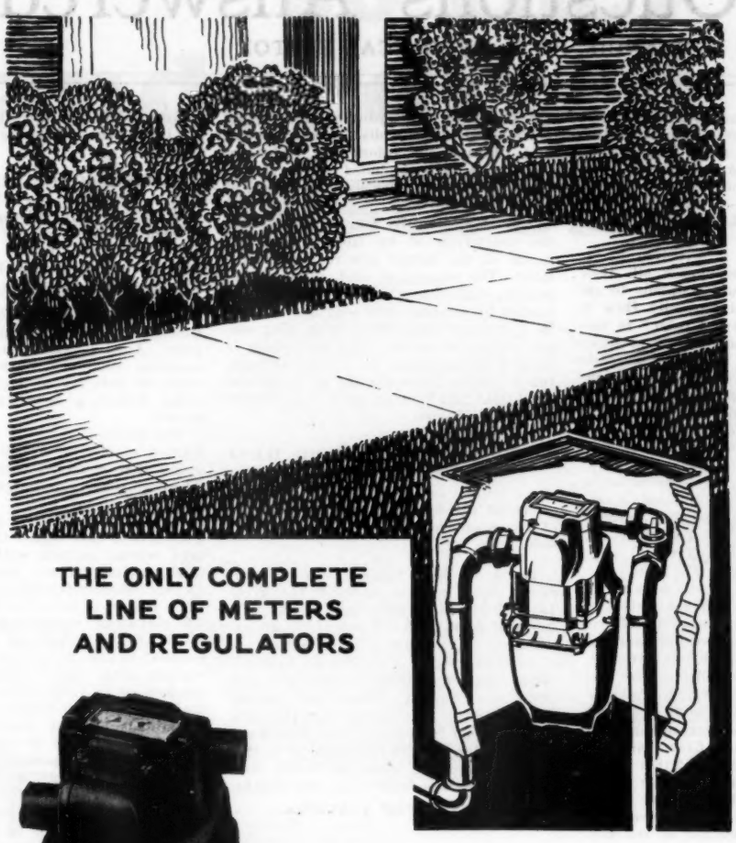
AUSTIN, Tex., Apr. 25.—Cigarets and natural gas were made sources of taxation when Gov. Sterling signed the Sanders bill which assesses a 2 per cent gross production tax on natural gas and levy a tax of 3 cents per package on cigarets.

SEEK GAS IN MISSOURI

The Atchison Oil & Gas Syndicate has moved in material for a wildcat test on a block of 3,000 acres of leases in Buchanan and Platte Counties in northwestern Missouri. The test will be drilled on the Kidwell land to approximately 1,300 feet in search of gas. A geological survey has been made of the area. Those associated in drilling the test are F. P. Brennan, W. P. Hill and John F. Nevins, all of Atchison, Kans.

INCREASED GAS SALES

CHICAGO, Apr. 25.—Memphis Natural Gas Co. reports sales of natural gas for March were 953,114,200 feet, against 798,451,500 feet in March last year. For the 12 months ended March 31, sales totaled 9,546,226,900 feet, against 7,877,078,080 feet for the preceding period.



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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

ROAD OIL FOR MINE DUST

I am interested in experimenting with a nondrying, noninflammable oil for use in spraying the working parts of coal mines for collecting dust and preventing explosions. Can an oil be made from petroleum with the properties listed for this purpose? Noninflammable, or slow-burning; nondrying or semidrying; consistency such that it will hold coal dust even in case of a strong "wind" from an explosion; nonfuming; reasonable cost. We have experimented with waste machine oil and find that one application stays moist and gathers dust for 30 days.—D. B.

It appears that the heavy oils known as road oils may be found satisfactory for holding dust in mines. There are many different specifications for road oils because of the varying physical conditions under which they are used and also the different types of crude oil have a bearing on the composition of any road oil that may be made. The Highway Commission of Illinois has tabulated the properties of road oils and the following have been arranged from this source:

ROAD OIL SPECIFICATIONS

Kind of oil—	Semi-asphaltic	Asphaltic
Water, not over	1.0%	1.0%
Specific gravity, not less than	0.92	0.95
A.P.I. gravity	22.3	17.5
Specific viscosity at 140° F.	16–26	28–42
Bitumen, not less than	99.5%	99.5%
Flashpoint, not under	176°F.	176°F.

There are additional specifications for such oils but the properties mentioned here are sufficient to indicate the general character of this class of oils. The road oils now being marketed may vary between 10 and 22 A.P.I., but probably an oil having a gravity between 15 and 18 A.P.I. would serve for mine purposes. The flashpoint is placed at 176° as a safety measure, the usual oil, however, will have a higher flashpoint.

Investigations conducted by the Illinois Highway Department have shown the best results, for road oil purposes, to be obtained by the product derived by reducing the liquid residues from pressure stills to the required specifications. Straightrun residues give the next best results. Semiasphaltic and paraffin base oils are better than asphalt base oil for the reason that they resist emulsification and retain their life much longer when in contact with soil and moisture. The latter should be important for mine oil.

RECLAIMING CRANKCASE OIL

I would like some information in regard to automobile crankcase oil. How and what method would I pursue to get flash and burning point of oil? How is the oil cleaned to natural color? Is this oil just as good oil after it is properly reclaimed as new oil? I would appreciate it if you would give me the proper information of this reclaiming process from start to finish and just how I would go about to make this oil just as good as new oil?—J. N. K.

Questions relating to the purification of crankcase oil have been discussed in several issues of The Oil and Gas Journal, this page, see issues of December 27, 1928; January 3 and 17, June 20, September 19, 1929; March 27, 1930.

The present status of the refining of crankcase oil is not so much a matter of perfecting a method for the profitable recovery of a useful product but more to provide an outlet so as to avoid a troublesome and hazardous condition that has frequently developed when crankcase drainings have been disposed of in a careless manner. Many cities have had to contend with explosions and fires that have resulted from the dumping of this refuse into the sewers and drains. Some towns have discovered that the bacterial plants for the treatment of sewage have been rendered inoperative because of the killing action of the gasoline and oil in this material. There are many cities that have passed ordinances prohibiting the disposal of crankcase drainings through the sewer systems. One of the most important of these regulations is that of the District of Columbia, because the district is under the direct supervision of the United States Government.

The government of the District of Columbia when contemplating the erection of a plant for the re-refining of crankcase oil, consulted the experts of the Bureau of Standards for the purpose of determining whether or not it would be possible to make a lubricating oil from this material that would meet the Federal specifications. As has been known for a long time, the bureau reported that a mineral lubricating oil does not wear out in service, like the wearing away of a tire or the rusting of iron, and that their investigations indicated that the recovery of a commercial oil was possible. "The results are entirely favorable and show that all of the re-refined oils pass government specifications. If a used oil is re-refined by a suitable process the product may be as good or even better than the original oil."

The selection of a method to apply when re-refining crankcase oil must be influenced by the source of the drainings, that is the character of the material to be treated. The drained oil from a fleet of cars and buses operating over city streets would probably not offer the same problems for its purification as the oil from a large number of stations where the oil had been collected from cars that had been running through various districts; over dirt, cinder, shell and chat roads.

The normal impurities present in crankcase oil may include: The light oils similar to gasoline, naphtha and kerosene; water, acid, several different metals, carbon, sand, road dust, grease, soap and fibers of many sorts. A glance at this list will make it clear that the crankcase oil will require more care in the recovery of the lubricating oil than was probably necessary for the refining of the oil from the crude oil. The ordinary refining operations are chiefly distillation, treating and filtering for color; but additional steps have to be included when refining the crankcase oil, such as the removal of water, dirt and acid.

Any solid material may be removed by the centrifuge or by filtering, but removal of the lighter oils requires distillation. The removal of acid, sulphur compounds, and tarry material is accomplished by treating with acid and alkalies in a manner comparable with that employed by the refiner. If a light color is desired the oil must be filtered through fuller's earth. Reducing the oil to the desired flash and burning point is incidental to the distillation.

ANALYSIS TEXON SAND OIL WEST TEXAS FIELD

Would you kindly furnish the analysis of Texon oil from the West Texas Field? —R. L. S.

Texon oil is so named from the producing sand of this name in the West Texas Field, a prolific sand found at a depth of 2,845 to 3,137 feet. It is an exceptional oil, yielding a large percentage of gasoline, which is similar to Pennsylvania crude containing paraffin wax and free from asphalt. There are several other sands in this section but the field gets its name from the Texon. The deepest producing well in the world is in this field, drilled to a depth of 8,633 feet. The analyses are from these two depths.

TEXON CRUDE ANALYSES

	Deep production 8,633 ft.	Shallow production 3,137 ft.
Tests on Crude—		
Gravity, A.P.I.	55.2	37.7
Viscosity @ 70° F.	...	53.
Viscosity @ 100° F.	33	49
Cold test	(*)	(*)
B.s. and w.	(†)	(†)
Sulphur (%)	.196	.68
Yields and Tests on Cuts—		
Gasoline, 410 e.p.—		
Yield, per cent	56.2	35.9
Gravity, A.P.I.	65.5	58.9
Initial, °F.	96	110
90 per cent	351	358
Endpoint	404	408
Sulphur	.135	.099
Antiknock—C.c.PbEt$_4$ to equal	9.0	5.0
Standard Reference Fuel		
Gasoline—392 @ 90%—		
Yield, per cent	59.7	40.6
Gravity, A.P.I.	64.4	56.6
Initial, °F.	98	113
90 per cent	374	392
Endpoint	426	437
Sulphur	.135	.125
Antiknock—C.c.PbEt$_4$	12.0	6.0
Kerosene—		
Yield	10.8	4.6
Gravity, A.P.I.	40.6	41.6
Flash—Tag. O.C. °F.	200	136
Fire	...	166
Sulphur	.142	.270
Gas Oil—		
Yield	None	26.1
Gravity		34.4
Flash C.O.C. °F.		185
Fire		245
Sulphur		.347
Wax Distillate or Heavy Gas Oil—		
Yield	None	8.0
Gravity		28.0
Flash C.O.C. °F.		325
Fire C.O.C.		455
Viscosity @ 100° F.		119
Cold test		68
Sulphur		.444
Bottoms—		
Yield	28.5	19.7
Gravity	29.7	18.5
Flash C.O.C.	340	525
Fire C.O.C.	400	605
Viscosity @ 210° F.	220	430
Cold test	52	50
Sulphur	.247	.611
Loss	1.000	1.000

*0 and flowing. †Trace.

These yields are calculated on the basis of running for the 90 per cent at 392° F. cut of gasoline. The flash temperatures are those determined in the Tag and Cleveland open cups, as indicated.

Another analysis of Texon oil may be found in The Oil and Gas Journal, April 2, 1931, page 30, by Egloff, Nelson and Truesdell.

BRITISH SHALE OIL INDUSTRY

Have you any information about the present condition of the shale oil industry in Scotland? Is this operation profitable in competition with the petroleum industry?—H. W. C.

A recent report by E. C. Earnest, Vice Consul at Edinburgh, in Commerce Reports, April 6, 1931, page 45, gives an excellent summary of the status of the shale oil industry of Scotland. The material following is extracted from this report.

The Scottish shale oil industry is now located mainly in a belt about 6 miles broad that stretches from Dalmeny and Abercorn, near Edinburgh, on the shores of the Firth of Forth, about 15 miles south of the district of Cobbinshaw. Throughout this region there are important mining centers with large populations, mainly, if not wholly, dependent on this industry for support. The Lothian shale is said to be a fine black or brownish clay-shale resembling a dark hardwood; the oil shale of the district is peculiar in that it is never found in close contact with coal. This industry was commenced in 1850, with a process originally intended to produce paraffin from bituminous coal by distillation. Owing to the lower price of shale the process was transferred to the shale fields, but the industry declined with the discovery of petroleum fields in the United States.

The British shale industry in a large measure is controlled by the Anglo-Persian Oil Co., through its subsidiary shale-oil company, Scottish Oils, Ltd., which, in turn, controls six subsidiary shale-oil companies. The company owns, in addition to its mines, a large refinery at Grangemouth, Scotland, established to refine Persian crude oil. In 1928 Grangemouth imported 4,265,000 bbls. of crude oil valued at $7,231,825; in 1929 this item was 4,147,496 bbls. of crude valued at $6,605,571. This plant also refines Scotch mineral oil.

During 1929, 16 shale mines gave employment to 2,697 persons. About twice as many persons were engaged in the industry in 1913. The employment list for January, 1931, was reported at 2,561.

In 1913 British shale production totaled 3,279,832 long tons, from which it declined gradually to 2,827,792 tons in 1920, 2,038,114 in 1928 and 2,023,609 in 1929. A ton of the Scottish shale yields 20.286 imperial gallons of crude oil and naphtha and 39.849 pounds of sulphate of ammonia, which is one of the better known by-products of the industry. In petroleum products, a ton of shale yields 2 imperial gallons of gasoline, 3.334 of kerosene, 7 of gas and fuel oils, 1.158 of lubricating oils, and a little paraffin wax. The yield of crude oil for the past three years has been estimated at 1,221,273 bbls. in 1927, 1,164,637 in 1928, and 1,156,065 in 1929. The 1929 production was valued at $2,906,280, compared with $2,867,400 for the 1928 output.

The gasoline, kerosene, fuel, gas and lubricating oils are all marketed with Great Britain, and exports consist only of paraffin wax and sulphate of ammonia.

It may be said that the British deposits are extensive enough to produce, at the present rate of output, for another five or six centuries. Probably the principal reason that operations have been continued is that the British government owns a controlling share in the Anglo-Persian, which controls the shale industry through subsidiary companies. It appears that operators are only paying expenses, and that the industry probably would be discontinued if it were not for throwing a large number of men out of employment, and for the loss of capital.

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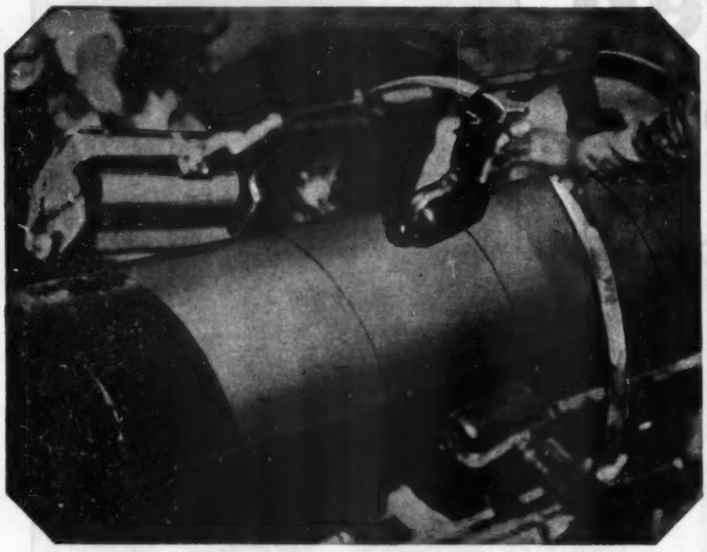

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DETERMINING OPEN FLOW CAPACITIES OF GAS WELLS

(Continued from Page 64)

by orifice meters and the flow delivered into the line.

The working pressures at the well head were measured by means of spring gauges which were calibrated once each day. The rock pressures were gauged with the same gauge which was used during the flow test. It has been found when testing wells through the siphon lines it is more satisfactory to take the working pressures on the well head and not on the flowing gas.

In testing the edge wells, many of which were wet, the shut-in pressures were 30 to 40 pounds less than the pressures on the wells equipped with 2-inch siphons. Usually it required at least one or two hours longer to obtain a satisfactory test than it did on dry wells.

From an operating standpoint this method of gauging the wells at Depew was very satisfactory.

Conclusion

The discussion of the various methods of determining gas well capacities in this paper shows that the industry is wide awake to the possibilities of bettering our methods of gauging wells. Of all the methods proposed the back pressure method has several distinct advantages.

1. The open flow determinations are more accurate because the potential delivery is judged by several pressure conditions in the well, rather than by the volume which flows through any size pipe under one pressure condition.
2. Gas waste is greatly reduced as the gas is usually measured into the pipe lines and saved.
3. Wells equipped with siphon lines may be accurately gauged, which will greatly aid in the proration of deliveries.
4. The wells may be more efficiently operated as it is possible to study their general condition and best working capacity from the tests.
5. By eliminating the necessity for opening the wells to the atmosphere reduces the hazard of pulling water into the bore of the well which usually causes bridging of the sand formation by caving.
6. Fire hazards are reduced to a minimum.

These advantages are all worthy of much consideration and it is hoped that in the near future the United States Bureau of Mines may make definite recommendations to the industry for use of the back pressure method of testing high pressure gas wells.

KNOWLEDGE OF WORKING OF BUSINESS STRESSED

(Continued from Page 64)

cation a hundredfold. At such a time when it is truly the survival of the fittest, those who have been educated and fitted for their places are those who are going to remain on the payroll while others are dropped. In what better manner can those connected in some way with gas measurement or regulation gain additional knowledge on their respective interests than to attend a meter school like this?

"One of our greatest troubles today is that we are, or have been, passing through an age which might be known as the 'Age of the Specialist.' To a certain extent the specialist is a wonderful being, certain it is that if we have an ailment we want the best help we can have from the specialist who has devoted his life study to that particular ailment. But in the industry I think we should guard against too much specialization. To be the best meter man in the country is a wonderful achievement but to be a meter man only without any knowledge of production, transmission and distribution problems will mean that when an opening occurs further up the line someone else will be the 'lucky' one. To be picked for that opening we must be not only the best meter man but the one who is best versed in other departments.

"So I say to you, don't let us get so busy in the work of our own department that we do not have time to learn what all of the other departments are for and how they function. If we will only look hard enough we will see that in some way we have a direct connection with every other department in the organization. It is our duty to ourselves to learn the workings of every division. As someone has said, 'The man who knows more than the boss usually gets to be boss. If he only thinks he knows more he usually gets fired.' And again, 'Command attention because of the attention you give to your job.'"

NEW YORK-PENNSYLVANIA GAS REGION DEVELOPMENT

(Continued from Page 48)

Co.'s No. 1 Ackley, Clymer Township, abandoned; No. 1 Shoemaker, Lawrence Township, drilling at 5,310 feet; No. 1 Allen, Farmington Township, casing 725 feet; No. 1 Boom, Lawrence Township, drilling at 3,050 feet; No. 1 Hoyt, Farmington Township, drilling at 2,300 feet; No. 2 Hoyt, Farmington Township, location.

Manufacturers Gas Co.'s No. 1 Buckbee, Lawrence Township, drilling at 530 feet. Mosherville Oil & Gas Co.'s No. 1 Brasted, Wells Township, drilling at 520 feet. Penn Ohio Gas Co.'s No. 2 E. W. Close, Farmington Township, drilling at 1,700 feet; No. 1 Price, Farmington Township, 360 feet of cement poured in hole, drilling again; No. 1 Place, Farmington Township, drilling at 720 feet. Penn Realty Investment Co.'s No. 1 Burdett, Lawrence Township, drilling at 200 feet. Penn United Gas Co.'s No. 1 Burdett, Lawrence Township, drilling at 1,810 feet; No. 1 Wheeler, Tioga Township, drilling at 960 feet; No. 1 Tremaine, Lawrence Township, rigging up. Queen-Flaherty's No. 1 Bache, Farmington Township, drilling at 2,100 feet. Sullivan Gas Co.'s No. 1 Elliott, Lawrence Township, drilling at 1,290 feet.

In the New York End

Belmont Quadrangle Corp.'s No. 1 J. Lensinsky, Tyrone Township, location 1,000 feet S. W. Deming's No. 1 Gasper, Tyrone Township, rigging up; No. 1 Gardner, Tyrone Township, location on Barrington Road, south of Schuyler-Yates County line. Benedum-Trees' No. 1 Murphy, Elmira Township, drilling at 2,700 feet; No. 1 Hagar, Schuyler County, drilling at 5,030 feet. Crandall's No. 1 Ernest, Tyrone Township, drilling at 6,001 feet.

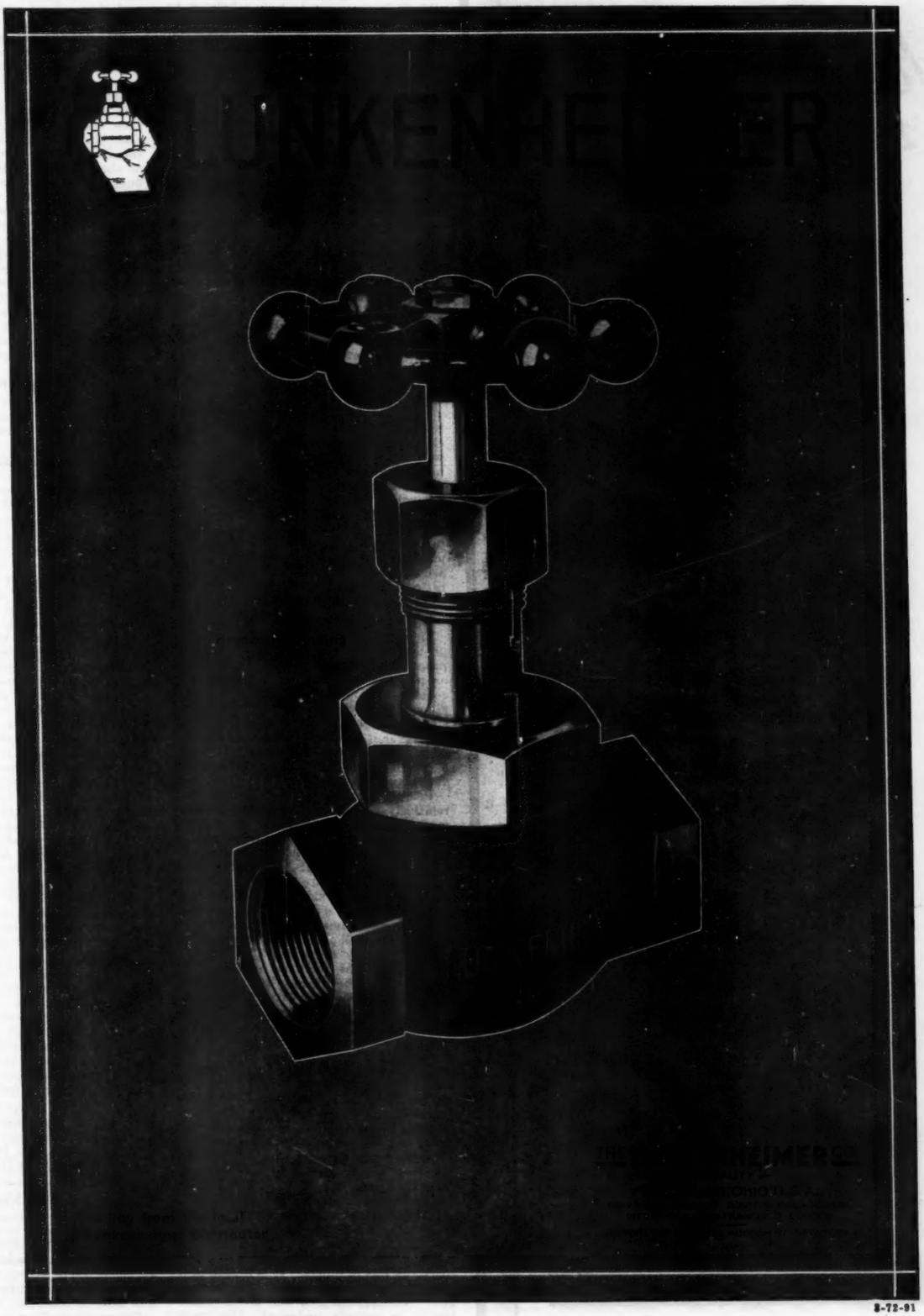
4,000,000-Foot Well

Crescent Oil Producing Corp.'s No. 1 Turner, Tyrone Township, brought in for 4,000,000 feet; No. 1 E. F. Smith, Wayne Township, location on Grove Springs Road, 1,500 feet from intersection with Wayne Hammondsport Highway; No. 1 Daboll, Tyrone Township, location Wayne village behind Arrowhead garage.

Cunningham and others' No. 1 Eveland, Tyrone Township, brought in for 4,000,000 feet; No. 1 Swarthout, Tyrone Township, rigging up; No. 1 Carlson, Tyrone Township, Wayne village location; No. 1 Hill, Tyrone Township, Wayne village location; No. 1 Finger Lakes Land Corp., Wayne Township, Wayne village location. De Golier's No. 1 Wyss, Tyrone Township, drilling at 850 feet. John Engle's No. 1 Engle, Orange Township, shut down at 2,830 feet. Lamoka Power Corp.'s No. 1 Disbrow, Tyrone Township, drilling at 830 feet. Watkins Salt Co.'s No. 1 Allen, Richmond Township, drilling at 800 feet.

Wittmer Oil & Gas Properties' No. 1 Oleszwyski, Tyrone Township, drilling at 1,250 feet; No. 1 Clyde Dencenburg, location in village of Wayne; No. 1 Wyss, location 800 feet south of Lamoka Power Corp.'s No. 1 Bigelow; No. 1 George Earnest, Tyrone Township, 100 feet west of No. 1 Eveland, rigging up; No. 1 Broughton, Canisteo Township, on Milwaukee Road, drilling at 800 feet.

Oriskany Drilling Co.'s No. 1 Faucett, Tyrone Township, drilling at 250 feet. American Morgan & Lyons Drilling Co.'s No. 1 Monroe, Canton Township, moving in. Corning Gas & Oil Development Corp.'s No. 1 Algers, Corning Township, location.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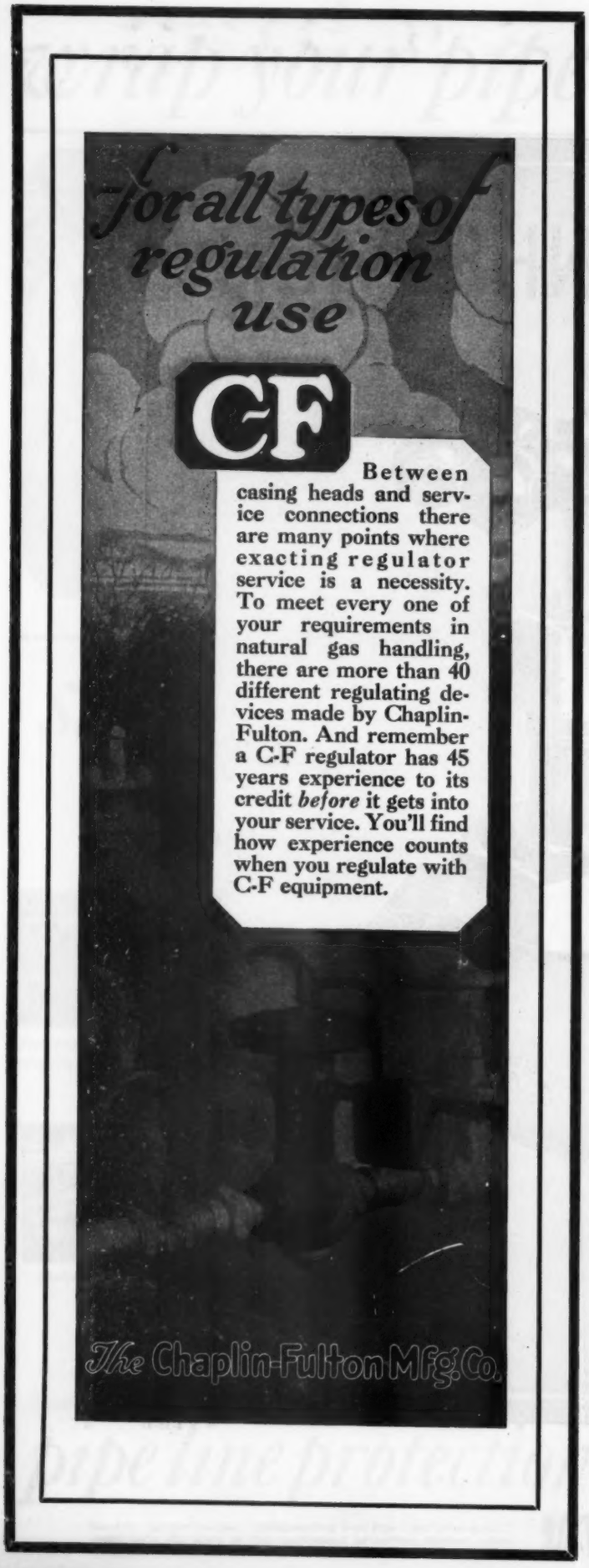
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LOAD FACTOR AND DEMAND CHARGE IMPORTANT ELEMENTS IN PRORATION

By "A Contributor"

The object of proration is to prevent the waste of petroleum. In order to do this it is necessary to keep a balance between production and requirements. Its success depends on the co-operation of all producing companies and it has been, and is being proved to be mechanically workable. A few years ago no one dreamed that proration would be practiced to the present extent. In fact, it would have been considered impossible of attainment. At the present time there are few pools which are producing to capacity, since many pools not under formal proration are being actually prorated by restriction of pipe line runs. In the Greater Seminole area proration was put into force for three months early in 1929 and again from October 15, 1929, to date.

There are few who will deny that proration is a successful conservation measure, and has been instrumental in the prevention of waste. Like everything else, success has been attained at a price. The industry has signed a check in blank made out to conservation. What the actual bill is will never be known, but a consideration of some of the items will give an idea of the many angles to the situation and how far they reach.

The instinct of the production man is to produce as much oil as possible as cheaply as possible. The first impression would be that under proration he would not have to be as efficient as when producing to capacity. The opposite is true. Proration actually puts an extra premium on good operation and an extra penalty for poor. It has now become necessary to produce a fraction of the oil which a property is capable of producing, and to attempt to reduce production costs in ratio to the cut in production. This is a very difficult thing to do.

Two Methods of Proration

In actual operation proration is accomplished in one of two ways. Either the properties are produced on a time basis or produced regularly on a certain percentage of potential. That is, they are allowed to produce to capacity for a stated number of days and then completely shut in for a stated number of days, or produced the full time and held back. Each method has certain inherent advantages and disadvantages.

Proration on pumping wells is usually relatively simple. The wells are pumped fewer hours or if necessary, rested for a day or two, or perhaps several days. In flush areas where wells are flowing natural, or are on the air-gas lift, the situation is usually quite complicated. Because no one can say what a flush well can produce even a month, it is necessary for the establishment of potential gauges to flow the well wide open at stated intervals, usually a month. The well is generally (in the Seminole area at least) equipped for the air-gas lift, and sufficient compressor capacity installed to flow the well at the maximum rate. In the case of leases with more than one well, the gauges are spread out over two or perhaps three or four days, if advisable. Practically all of the flush pools in the Greater Seminole area are allowed only 25 per cent of potential and the older pools 50 per cent. Under an allowance of 25 per cent in the case of a one-well lease, the equipment may be running to capacity only one day out of 30. In the case of the two-well base, usually only two days out of 30. The rest of the time it is running at part load or occasionally may even be completely shut down. The operator must build and maintain equipment which operates at 50 per cent capacity, perhaps more in a few cases and less in others. It is a good deal like hunting rabbits with an elephant gun. An elephant gun will kill a rabbit but it is entirely undesirable for such game.

Demand Charge

There are two terms which fit into the situation. The practical production man and the man in the field might not recognize them by name, but he has been dealing with them every day that he handled production and every time he bought material or hired or fired a man. They are called "load factor" and "demand charge" and they are on every job in some form or other.

The demand charge, in plain terms, is an amount determined by requirements. Consider for a moment a merchant, let us say a shoe dealer—one man goes into his store and buys a pair of brown shoes, size eight and one-half. Another black shoe, size eight Still another, something else. In order for that merchant to sell shoes he must have a volume and variety of shoes on his shelves. Everyone who buys shoes helps pay for the carrying charges on the goods on the shelf in order that he may be assured of being able to buy the kind of shoe he wants when he wants it. The same holds true in every form of merchandising and the same principle holds true in lease operation. Men, machinery and equipment are kept on the job, whether they are in full use or not, just to be sure that when they are needed they will be available. This availability, this ability to call on men or materials, costs money and represents the demand charge.

Load Factor

Load factor represents the utilization of men, materials, or power. If materials or men are working to capacity the load factor is high. If idle a portion of the time or operating at part capacity it is low. High load factor usually represents efficiency in operation, and a low load factor usually the opposite.

For example, consider the electric motor, because it is a fine example of load factor and demand charge, and can be easily pinned down to concrete figures: Four 100 horsepower motors run to full capacity four days out of the month. The rest of the time only two of them run. By the four days' running time a demand rating has been established for which the power company will make a demand charge of approximately 300 kilowatts. At full load the consumption would be in excess of 200,000 kilowatt hours, but on full load four days and half load 26 days the consumption would be only 120,000 kilowatt hours. The demand charge in either case is the same, but on half time the cost per kilowatt hour consumption is 75 per cent more than on full load. At full load the load factor would approach 100 per cent and at half load for 26 days would be about 57 per cent. In the one case, the total bill would have, due to a high load factor, a discount of 20 per cent and in the other only 7 per cent. It is easy to see that such a situation causes the unit cost to mount. The operator not only produces less oil but it costs him more per barrel to get it.

The case of gas engines is probably little different from that of electric motors, only for gas engines it would require some intricate cost accounting to arrive at the figures. In either case there is no doubt but that proration has cut down the load factor and thereby increased the demand charge per unit. In like manner, the same is true of equipment, material and men.

The effect of proration on operation is far reaching and leads afield into many hidden corners. Proration may alleviate many economic ills, but from a purely operating standpoint it is rather painful.

DEATH OF DANIEL P. LEARY

Daniel P. Leary, division superintendent of the Prairie Pipe Line Co., with headquarters at Eastland, Tex., died at his home there recently after an illness of over two years duration. The funeral was held in Allegany, N. Y.

Deceased was 59 years of age. He had been in the service of the Prairie organization for many years. In his younger days he was a fireman on the famous old oil country narrow gauge line known as the Bradford, Bordell & Kinzua Railroad. He then entered the service of the National Transit Co. at Allegany, N. Y., as a gauger.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 30)

Hawkins et al's No. 1 Moran, Sec. 1-7-11.... Began Apr. 15; set 10-in. 100 ft; drlg. 1,700 ft.

O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-12.... S.D. 1,230 ft.

Jordon Drlg. Co.'s No. 1 La. Long Leaf Lbr. Co., 660 ft. N, 247 ft. W, SE cor. SW SE, Sec. 3-7-11.... Deepened to 2,600 ft; flowing by heads 300 bbls.

Lyons & Neely's No. 1 Baird Co., Sec. 1-7-11.... Set 6-in. 2,410 ft.

H. H. Alvord, Jr.'s No. 1 Sabine Lbr. Co., 200 ft. S, 175 ft. W, NE cor. SE NW, Sec. 11-7-12.... Began Apr. 20; set 10-in. 40 ft.

Ohio Oil Co.'s No. 8 Bowman-Hicks, 330 ft. N, 330 ft. E, NW cor. NE, Sec. 2-7-13.... Set 6⅝-in. 2,200 ft.

Sabine Royalties Co., Inc.'s No. 1 Hill, 400 ft. S, 200 ft. E, NW cor. NE NE, Sec. 5-7-11.... 1,900 ft. oil in hole; T.D. 2,506 ft.

The Texas Co.'s No. 3 Stille, 330 ft. S, 333 ft. E, NW cor. SW, Sec. 33-8-11.... Derrick.

Triangle Pet. Co.'s No. 2 Sabine Lbr. Co., 330 ft. N and E, SW cor., Sec. 36-8-12.... Derrick.

J. C. Walton's No. 1 Sabine Lbr. Co., 300 ft. S, 300 ft. W, NE cor. NW, Sec. 11-7-12.... Tested 2,376 ft; S.O; W.O.

WEBSTER PARISH—SAREPTA

Cassidy & Davis' No. 1 Nickerson, 300 ft. S, 300 ft. W, NE cor. SW, Sec. 29-23-10.... S.D. 150 ft.

ARKANSAS

OUACHITA COUNTY—STEPHENS

Wesson & Bonner's No. 1 Wesson, 500 ft. W, 175 ft. N, SE cor. SW NW, Sec. 22-15-19.... Trying to shut off wtr. flow.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 3 Furlough, 408 ft. N, 192 ft. E, SW cor. NW NE, Sec. 12-17-14.... Flowed 719 bbls. in 14 hrs; went dead; W.O.S.R.

UNION COUNTY—EL DORADO

Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15.... Began Apr. 15; set 12½-in. 272 ft; drlg. 1,336 ft.

Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15.... S.D. funds; T.D. 2,186 ft.

Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15.... S.D. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13.... Location.

Marine Oil Co.'s No. 4-B Thompson, Sec. 10-18-13.... Drlg. plug; arranging to bail 3,576 ft.

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur.... Location.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 13 Louis Werner, 1,590 ft. S, 600 ft. W, SE cor. Carrie Steele tr., B. C. Jordan Sur.... Bailing csg. 4,683 ft.

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur.... S.D. 2,600 ft.

Dillon & Bradham's (was W. G. Banks et al's) No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 200 ac. in Hampton West Sur.... S.D. 1,555 ft.

S. E. Bell et al's No. 1 Burnett Lbr. Co., C. S. B. Hendricks Sur.... S.D; W.O. 3,335 ft.

C. D. Neff et al's No. 6 Brumble, B. C. Jordan Sur.... Derrick.

United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lease, in B. C. Jordan Sur.... Location.

MISSISSIPPI

HINDS COUNTY

Cleve Love et al's No. 2 Ridgeway-McGhee, SE cor. NW, Sec. 2-5-1e.... Derrick.

Pirtle & Flint's No. 1 Payne, 450 ft. W, 50 ft. N, SE cor. SW SW, Sec. 27-6-1e.... S.D; W.O. 2,562 ft.

RANKIN COUNTY

Miss. G. & F. Co.'s No. 1 Hanna, SW cor. SW NE, Sec. 14-5-1e.... Derrick.

Pioneer O. & G. Co.'s No. 1 Ragland, NE cor. SW SW, Sec. 12-5-1e.... Completed 20,000,000 ft. gas 2,390 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

CLARK COUNTY

Company, farm and location— Remarks:

Gulf Ref. Co.'s No. 1 Box, 526 ft. W, 493 ft. N, C, SE, Sec. 11-3n-15e.... Drlg. 4,075 ft.

CLAY COUNTY

(Cable tools)

Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-15-5.... Straightening hole 3,526 ft.

GRENADA COUNTY

Carter Oil Co. et al's No. 2 Dubard, NW cor., Sec. 18-22n-4e.... Derrick.

HINDS COUNTY

Attkisson & Dyer's No. 1 Downing et al, SE NE, Sec. 27-6-1.... S.D. 1,455 ft.

Cane River O. & G. Co.'s No. 1 Kabbles, NE cor. SW SW, Sec. 15-5-1e.... Waiting on cmt. 3,397 ft.

Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e.... S.D. 74 ft.

Industrial G. & E. Co.'s No. 1 Ill. Central R.R., 2,400 ft. E, 100 ft. S, C, Sec. 4-5n-1e.... Set 10-in. 762 ft.

Southern Pet. Co.'s No. 1 Wilson (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 28-6-1e.... S.D. 20 ft; W.O.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keys, C NW NE, Sec. 2-12-9.... Coring 1,295-1,311 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19.... S.D. 3,015 ft.

Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19.... S.D. 1,987 ft.

RANKIN COUNTY

Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e.... Derrick.

Grandstaff et al's No. 1 Carr, 2,780 ft. W, 550 ft. N, SE cor., Sec. 12-5n-1e.... Began drlg. Apr. 5; set 10-in. at 60 ft.

J. T. Hester's No. 1 Ellis, Sec. 12-5-1.... Completed Apr. 21; estimated 35,000,000 ft. gas; T.D. 2,398 ft.

R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e.. S.D. 900 ft.

Cleve Love's No. 1 Muse, SE cor. SW SW, Sec. 32-7-4e.. Drlg. 3,153 ft.

Love Pet. Co.'s No. 1 Interior Lbr. Co., Sec. 28-6n-2e.... S.D. 867 ft.

WARREN COUNTY

Dixie Pet. Co.'s No. 1 Henry, 1,375 ft. W, 330 ft. N, SE cor. NE, Sec. 36-17-4, of Choctaw Div. on Lot 3.. Began drlg. Apr. 15; set 12½-in. 120 ft; drlg. 624 ft.

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-3.... Rigging up.

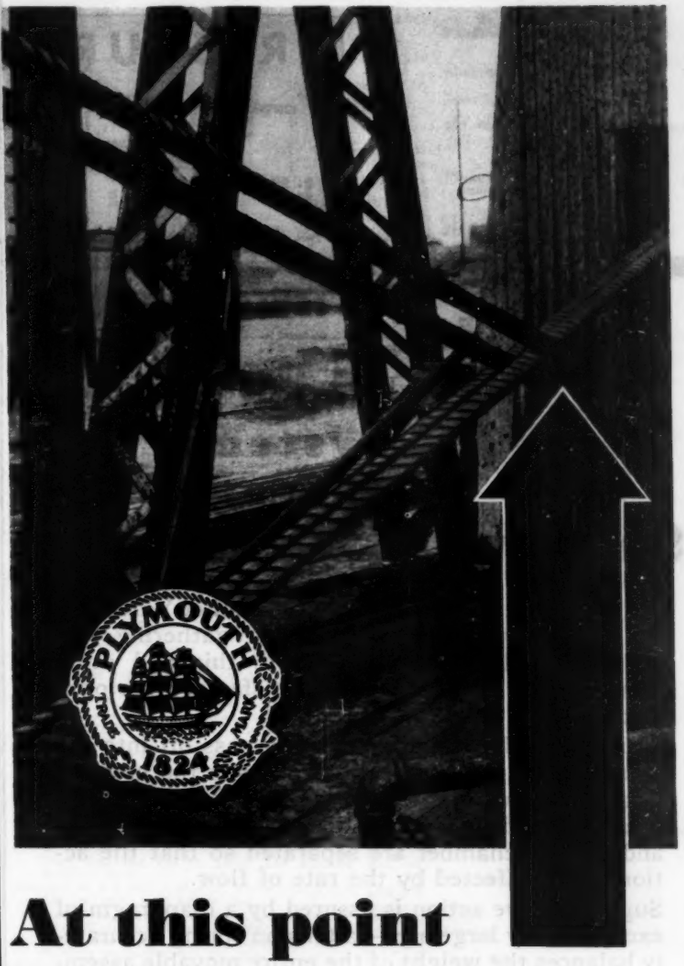
Vicksburg O. & G. Co.'s No. 1 Dornbush, Sec. 3-13-5.... S.D. 1,320 ft.

WINSTON COUNTY

Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14.... Drlg. 2,750 ft.

YALOBUSHA COUNTY

Collett-Carter Oil Co.'s No. 2 Blackmur, 990 ft. W, 385 ft. N, C, Sec. 14-11-4.... Recemented 8¼-in. 2,428 ft; T.D. 2,960 ft.



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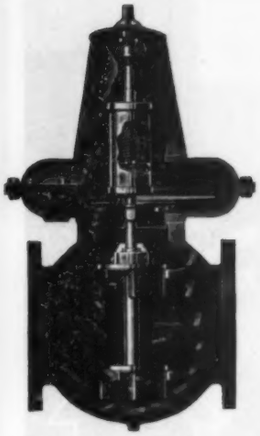

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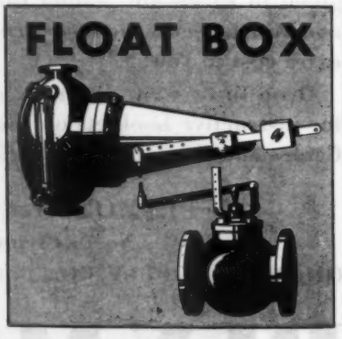

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CORROSION OF PUMP BALLS AND SEATS IN PERMIAN BASIN WELLS EXCESSIVE

By John T. Gay
Texas State Oil Co.*

Operators have found no entirely satisfactory solution to the question of balls and seats in the Permian Basin. The Southern Crude Oil Purchasing Co. has run and is still running a number of fluid-packed pumps using steel seats and bronze balls, these balls and seats being made by several manufacturers. They have tried many different types of balls and seats. The steel seat and steel ball have given them more trouble than the combination outfit.

The Axelson, D & B and fluid-packed pumps are all working with a fair degree of success. The different type of liner barrel reduces the rod stress, thereby eliminating rod breakage which is the most expensive item in this water area.

The Shell Petroleum Corp. is using almost exclusively Sargent Engineering Co. screwed seats made of hard metal with ball metal solid plumb bobs. They have found the solid plumb bobs to give less trouble in this area than the hollow plumb bob due to the fact that the hollow bobs wear faster than the solid bobs.

The California Co. has tried several different types of balls and seats, including Bradford Motor Works, D & B, Hough and Petroleum Equipment Co., and have found as previously stated that the bronze ball and steel seat are giving the best results.

The Prairie Oil & Gas Co., Texon Oil & Land Co. and Continental Oil Co. are using some Bakelite drops and steel seats which they all state are giving good results. The only trouble experienced was in the beginning that the drops did not have sufficient clearance to prevent them from sticking in the cage after becoming saturated with water, this being eliminated by giving them one sixty-fourth inch clearance. The Bakelite drops do not wear fast except in wells where there is sand.

Most operators in this field are using plain steel barrels with various types of cups; namely, Darcova and Triad and many types put out by the various companies on tests, all finally coming to Darcova and Triad.

The Texas State Oil Co. is using Peleum Equipment Co. nu-alloy steel seats with nu-bronze balls. They have had them run as long as nine months in standing valves without interruption, this being on 4-inch tubing at 1,800 feet. These people experienced some fine floating sand in one well, Section 35, in the center of the field used fluid-packed pump, finally pumped all sand out of the well at which time they installed plain barrel. The only drawback to the liner barrels of various types and fluid-packed pumps is that they will not handle the volume of fluid required in the larger wells but work well in the smaller producers.

In the extreme southern part of the field, that is, the northern edge of Ward County, Richardson & Kelsey experienced a large quantity of fine sand in their wells. The cups last only a short time. This proposition has not been worked out thoroughly at this time as they are not forced to pump their production. The wells will flow as much as they will pump.

The Lion Oil & Refining Co. has used and is using some D & B drops and seats that are fairly successful. The company has had considerable trouble with the balls cutting out the cages, this being partially eliminated by the manufacturers closely co-operating with the producers in that they manufacture short cages with less clearance. This is partially eliminated also by the use of a ball that is softer than the material in the cage.

The Cranfill-Reynolds Co. is using steel seats and steel balls in Lea County, New Mexico, with little trouble.

The Texas Company is getting good results from Sargent steel seats and steel plumb bobs in the McCamey district; in fact, this equipment is doing better work in that area than any other tried. However, this same equipment possibly would not work in other areas. The fact remains that it is up to the operator to find the equipment that will give better results in the particular well.

The Gulf Production Co. has experimented with practically every known ball and seat manufactured, in the Crane County production, finally deciding that the steel seat and bronze ball will give the longest service; however, they continue to make careful experiments and keep accurate records of various types of balls and seats.

The Humble Oil & Refining Co. in Winkler County has also experimented with some 8 or 10 different types of balls and seats and are still experimenting with them. The longest run made by any one was a steel seat and a bronze ball. They are having very good success with the D & B short cage. They are replacing the standard cages with short cages and find that they increase the lift of balls and seat practically one-third. They have several Sargent valves on test now, using bronze plumb bobs and steel seats.

The Texas State Oil Co. came to the short cage use entirely after experimenting with the various types of standard cages and also eliminated a large percentage of their shutdown time due to ball and seat and cage trouble.

To sum it all up, the operators as a whole in this field will continue to change from one ball and seat to the other in an effort to cut shutdown time and get more efficient service from their equipment. There is considerable room for improvement in all types of balls and seats, plumb bobs, etc. Each manufacturer represented in Winkler County is giving every operator the most perfect co-operation that has been experienced in many years; all working together for the common good.

*Read before Wink, Tex., chapter of American Petroleum Institute.

Shell Keeps Interest In Leases It Sells in East Texas Counties

DALLAS, Tex., Apr. 24.—Details of the sale of the Shell Petroleum Co. acreage in the Lathrop area to Yount Lee reported a short time ago have been made public here.

The consideration was given at $1,250,000, with 668 acres included in the deal. Of the total, $500.000 is cash and the remainder in oil. It was reported that Shell would retain 51 per cent interest, the sale being only of 49 per cent. The first report gave the consideration as $250,000, which was regarded as entirely out of line with the value of the acreage.

The Shell still has above 30,000 acres of which about 10,000 is proved, in East Texas. Negotiations of other companies for purchase of 49 per cent of this were reported last week, but nothing definite has materialized, so far as is known.

Purchase of 200 acres and the McMillan No. 1 Mrs. M. L. Thompson producer, in the Joiner area, by the Tidal, was reported here Tuesday. The price totaled at least $275,000 with $25,000 or more cash and $250,000 to be paid out of the oil, it was reported. The well, which was recently brought in, flowed 605 bbls. the first hour through tubing and casing.

Paying a base of $125 an acre, the Moody-Seagraves Production Co. is reported to have bought one-eighth royalty under the T. W. Wilkinson 50 and 600-acre tracts, the T. W. Wilkinson 70-acre tract and the H. M. Wilkinson 55-acre tract. The acreage is in Gregg County.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 43)

Magnolia Pet. Co.'s No. 1 Eddington, 330 ft. N, 370 ft. E, NE, Sec. 24, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,870 ft; making 45 bbls. a day from 2,776-78 ft.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... S.D. 2,619 ft.

Operators Royalty & Prod. Co.'s No. 2 Vanniman, 330 ft. S and W, E½ NE, Sec. 175, Blk. 3, L.&G.N. Sur. .. Fishing; T.D. 2,915 ft.

Sanders et al's No. 1 Wright, 330 ft. S, 114 ft. E, Sec. 12, Blk. 3, L.&G.N. Sur. ..... S.D. 2,649 ft.

Skelly O. & G. Co.'s No. 1 Henston, 330 ft. N, 330 ft. E, Sec. 164, Blk. 3, L.&G.N. Sur. ..... Drlg. 2,215 ft.

Stanolind O. & G. Co.'s No. 2 Cobb, 330 ft. S and E, Sec. 165, Blk. 3, L.&G.N. Sur. ..... Drlg. by whipstock 2,835 ft.

Steckoll & Reigers' No. 1 Davidson, 660 ft. N and W, Sec. 64, Blk. B-2, H.&G.N. Sur. ..... Location.

Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... S.D. 2,636 ft.

Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... Cellar.

HUTCHINSON COUNTY

Continental Oil Co.'s No. 1 Moore, 990 ft. S, 2,276 ft. W, S½ SW, Sec. 21, Blk. M-21, T.C. Sur. ..... Drlg. 2,970 ft.

Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. .. S.D. 450 ft.

Dixon Creek Oil Co.'s No. 1-F Johnson Bros., 330 ft. N and E of W 67 ac., SW, Sec. 15, Blk. XO3, H.&O.B. Sur. ..... T.D. 3,125 ft; to complete for gas well; making estimated 30,000,000 ft.

Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... Drlg. 2,210 ft.

Huber Pet. Co.'s No. 1 McIlroy, 330 ft. S, 330 ft. W, Sec. 28, Blk. Y, A.&B. Sur. ..... S.D. 2,345 ft; S.G. 2,280 ft; 3,000,000 ft. gas from 2,345 ft.

Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. ..... T.D. 2,916 ft; to U.R. 6-in. csg; 2,000,000 ft. gas 2,915 ft.

Liner et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ..... Spudded and S.D.

Stanolind O. & G. Co.'s No. 2-A Pitcher, 990 ft. S, 330 ft. W, SE, Sec. 19, Blk. M-21, T.C.R.R. Sur. ..... T.D. 3,150 ft; P.B. 3,135 ft. and shot with 170 qts. 3,050-3,135 ft.

Harry Steckel's No. 4 Whittenburg, 990 ft. N, 330 ft. E, NE, Sec. 89, Blk. Z, L.C.&S.F. Sur. ..... Rig.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.D. 3,115 ft.

The Texas Co.'s No. 1 Moore, 990 ft. N, 330 ft. W, SE, Sec. 21, Blk. M-21, T.-C. Ry. Sur. ..... T.D. 3,000 ft; preparing to run 6-in. csg.

Texilvania Oil Co.'s No. 1 Harvey, 330 ft. N and W, SW NW, Sec. 14, Blk. M-21 ..... S.D. 3,092 ft; swbd. 1 bbl. per hr.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Cloud & Dana's No. 1 Jones, 330 ft. N and E, SW, Sec. 169, Blk. 3-T, T.&N.O. Sur. ..... Trying to straighten hole; T.D. 3,220 ft.

Continental Oil Co.'s No. 1 Brown, 990 ft. N and W, SE, Sec. 172, Blk. 3-T, T.&N.O. Sur. ..... T.D. 3,655 ft; to complete for gas well.

Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. S and W, NE, Sec. 135, Blk. 3, T.&N.O. Sur. ..... T.D. 3,526 ft; swbng. 12 bbls. per day with little gas.

Gulf Prod. Co.'s No. 2 Kilgore, C SE, Sec. 29, Blk. P.Mc., E.L.R.R. Sur. ..... Run 8-in. csg. 2,844 ft; and standardizing.

Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ..... Location.

Sunray Oil Co.'s No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... Cellar.

Plains Holding Co.'s No. 1 Bivins, 776 ft. S, 370 ft. E, S½ N½, Sec. 95, Blk. 46, H.&T.C.R.R. Sur. ..... S.G. 1,575 ft; drlg. 2,075 ft.

Plains Holding Co.'s No. 2 Bivins, 1,115 ft. S, 627 ft. E, Sec. 93, Blk. 46, H.&T.C. Sur. ..... 12-in. csg. cmt. at 387 ft.

Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.

The Texas Co.'s No. 1 Jester, C SW, Sec. 14, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 1,275 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.

Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.S.F. Sur. ..... S.D. 800 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1-B Crawford ..... Drlg. 1,840 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, NW cor. SE, Sec. 2, Blk. A-9, H.&G.N. Sur. ..... Rig.

Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ..... Rigged up and S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 43)

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. ..... Shut down 3,089 ft.

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 254, S.F. No. 7,247 ..... Shut down 540 ft.

FISHER COUNTY

Stanolind Oil & Gas Co.'s No. 2 Steele, 1,200 ft. E and 330 ft. N of SW cor. Sec. 210, B.B.B.&C. Sur. ..... Drlg. 1,670 ft.; top lime 1,600 ft.

The Texas Company's No. 1 Jean, 380 ft. from E and 400 ft. S of Sec. 201, Blk. 1, B.B.B.&C. Sur. ..... Rigging up.

GAINES COUNTY

Landreth Prod. Co.'s No. 1 Alley, 660 ft. from N and W of Sec. 2, Blk. A-30, P.S.L. Sur. ..... Rigging up.

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE Sec. 4, Blk. A-8, P.S.L. Sur. ..... Shut down 3,435 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 13, Blk. 4, H.&G.N. Sur. ..... Spudded and shut down.

Perry & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Shut down 1,990 ft.

HOWARD COUNTY

Continental Oil Co.'s No. 1 Brindley, 660 ft. from S and E of Sec. 18, Blk. 33, Twp. 1s, T.&P. Sur. ..... Drlg. by 10-in. casing 1,910 ft.

Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 20, Twp. 1s, T.&P. Sur.. Spudded and shut down.

HUDSPETH COUNTY

Patillo & Welch's No. 1 Briggs, 300 ft. from S and W Sec. 13, Blk. 73, Twp. 7, T.&P. Sur. ..... Drlg. 475 ft.

Theison's No. 1 University, 3,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E ..... Spudded 35 ft. and shut down.

IRION COUNTY

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E Sec. 2, Blk. 3, H.&T.C. Sur. ..... Shut down 1,360 ft.

Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W, Sec. 3,081, Blk. 28, H.&T.C. Sur. ..... Location.

Dixie Oil Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... 300 ft. oil in hole from 4,155-63 ft.; drlg. 4,625 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ..... Plugging back to 1,220 ft. to shoot; total depth 1,506 ft.

JONES COUNTY

Bond & Trout's No. 1 Williams, 330 ft. S and E of SW cor. of J. W. Martin Sur. A-1,308 in Sec. 12 ..... Shut down 2,581 ft.; pumped 4 bbls. and exhausted.

Jameson et al's No. 1 King, 4,681 ft. from S and 150 ft. from E of M. Bueno Sur. No. 196 ..... Shut down 1,950 ft.

Hardly Able Oil Co.'s No. 1 Butter, 5,790 ft. from S and 330 ft. from E of W. Littlefield Sur. No. 282, Abst. 251 ..... Shut down 2,520 ft.

Shaheen et al's No. 1 Chittim, 165 ft. from S and W of 139.8-acre farm in G. Martines Sur. No. 195 ..... Swabbed 20 bbls. in 24 hours; shut down 2,049 ft.

Young & McNeil's No. 1 L. R. Cade, 150 ft. from N and 450 ft. E of NW cor. of J. A. Williams 200-acre tract in Sec. 17, but in Sec. 12, Blk. 19, T.&P. Sur. ..... Drlg. 810 ft.

LOVING COUNTY

Appenauer et al's No. 2 Allen, 2,310 ft. from NE and 330 ft. from NW Sec. 90, Blk. 1, W.&N.W. Sur. ..... Shut down 4,140 ft.

Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 53, T.&P. Sur. ..... Drlg. 650 ft.

Ervin & Mahres' No. 1 Meyer, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Location.

Talbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 33, H.&T.C. Sur. ..... Total depth 1,365 ft.

Hoffman et al's No. 1 Ramsey et al, 330 ft. NE and SE Sec. 83, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,680 ft.

Hoffman et al's No. 2 Ramsey et al, 2,310 ft. from NE and 330 ft. from SE Sec. 83 ..... Drlg. 810 ft.

Irwin et al's No. 1 Auld, 1,825 ft. from NE and 1,298 ft. from NW Sec. 67, Blk. 1, W.&N.W. Sur. ..... Rig up.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 4,050 ft.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W Sec. 91, Blk. 1, W.&N.W. Sur. ..... Rigged up and shut down.

Lockhart's No. 1 Bell, 1,721 ft. from NE and 410 ft. from SE Sec. 91, Blk. 1, W.&N.W. Sur. ..... Drlg. 2,460 ft.

Lockhart & Co.'s No. 2 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 33, H.&T.C. Sur. ..... Rigged up and shut down.

Martin et al's No. 1 Johnson, 1,320 ft from NW and 330 ft. from SW Sec. 86, Blk. 1, W.&N.W. Sur. ..... Location.

Richmond Drlg. Co.'s No. 1 Russell, 990 ft. from NE and 330 ft. from NW Sec. 80, Blk. 31, W.&N.W. Sur.. Drlg. 2,210 ft.

Rush et al's No. 1 Wheat, 330 ft. from NW and SW Sec. 77, Blk. 1, W.&N.W. Sur. ..... Cellar.

Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ..... Total depth 3,182 ft.; 300 ft. oil in hole; to shoot.

W. A. Suddreth et al's No. 1 Capitola Pool, 2,970 ft. from NE and 990 ft. from NW Sec. 73, Blk. 33, H.&T.C. Sur. ..... Shut down 1,315 ft.

Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ..... Rig.

California Co.'s No. 3 Allen, 2,191 ft. from NW and 2,182 ft. from SW Sec. 90, Blk. 1, W.&N.W. Sur. .... Fishing 2,850 ft.

California Co.'s No. 4 Allen, 3,121 ft. from NW and 3,113 ft. from SW Sec. 90, Blk. 1 ..... Drlg. 725 ft.

West Texas Pet. Corp.'s No. 1 Salsbury, 330 ft. from NW and SW Sec. 89, Blk. 1, W.&N.W. Sur. ..... Total depth 4,384 ft.; testing; top pay 4,380 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ..... Drlg. up underreamer lugs total depth 2,665 ft.

Voss & Bryan et al's No. 1 F. Bredenberger, 600 ft. from N and 1,000 ft. from W Sec. 455, E. Henkel Sur. ..... Fishing 800 ft.

PECOS COUNTY

Hagen et al's No. 1 Shearer, 660 ft. from SE and 660 ft. from SW Sec. 45, Blk. 10, H.&G.N. Sur. ..... Drlg. 610 ft.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE Sec. 40, Blk. 104, G.C.&S.F. Sur. ..... Location.

J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. ..... Shut down 2,283 ft.

Penn Oil Co. et al's No. 1 Alvis, 2,358 ft. from S and 1,527 ft. from W Sec. 155, Blk. 3, T.&P. Sur. ..... Drlg. 3,275 ft.

Perren Oil Co.'s No. 2 Eaton, S of E Sec. 27, Blk. 3, H.&T.C. Sur. ..... Fishing 1,765 ft.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ..... Shut down 5,000 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Drlg. 1,010 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW Sec. 31, Blk. 34, H.&T.C. Sur. ..... Location.

Whitaker et al's No. 1 Mary Devlin, 150 ft. from N and 150 ft. from E Sec. 69, F. Hernandez Sur. ..... Drlg. 425 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,120 ft. S and 1,100 ft. from W Sec. 25, Blk. 9 ..... Location.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 580 ft.

Humble Oil & Ref. Co.'s No. 1 Bolmorhea Livestock Co., 1,320 ft. from N and 1,320 ft. from W Sec. 33, Blk. 5, H.&G.N. Sur. ..... Rigging up.

Lee O. White et al's No. 1 Hershorsor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur... Total depth 4,415 ft.; cleaning out.

California Co.'s No. 2 Kloh & Rumsey, 990 ft. from S and 1,520 ft. from E Sec. 11, Blk. 74, Twp. 4, T.&P. Sur. ..... Drlg. 2,645 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Shut down 2,385 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Shut down 2,035 ft.

Texas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 37, Blk. K, G.H.&S.A. Sur. ..... Shut down 5,006 ft.; contract depth.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Fishing 2,940 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. 1, 1,290 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Cleaning out 5,032 ft.

Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and shut down.

Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Fishing 3,112 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, H.&T.C. Sur., but in Sec. 16, Blk. 34, Twp. 4s, T.&P. Sur. ..... Drlg. 1,570 ft.

TAYLOR COUNTY

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land — Drlg. 6,370 ft.
Sanger et al's No. 1 City of Abilene, 330 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land — Shut down 2,785 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. — Shut down 2,669 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. — Shut down 3,150 ft.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. — Shut down 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F. Sur. — Shut down 6,120 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. — Shut down 912 ft.; to run 12½-in. casing.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. — Shut down 760 ft.; show oil and gas 725 ft.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Dinger Sur. — Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. — Shut down 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 — Shut down 200 ft.

UPTON COUNTY

Duffey et al's No. 1 McClintic, 990 ft. from N and 330 ft. from E, C.C.S.D.&R.G.N.G. Sur. — Shut down 3,110 ft.
Mintex Oil Co.'s No. 1 Lane, 2,310 ft. from N and 1,650 ft. from W Sec. 36, Blk. 1, M.-K.-T. Sur. — Drlg. 1,000 ft.; top salt 738 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. — Shut down 5,420 ft.; to run 5 3/16-in. casing.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, L&G.N. Sur., elev. 2,130 ft. — Shut down 6,780 ft.

WARD COUNTY

Bradford et al's No. 1 Carson, 990 ft. from NE and SE Sec. 26, Blk. 5, H.&T.C. Sur. — Drlg. 1,275 ft.
Bradford & Abell's No. 2 Boogher, 1,160 ft. from NW and 800 ft. from SW, Sec. 11, Blk. 5, H.&T.C. Sur. — Location.
Beckley et al's No. 1 Johnson, 4,140 ft. from NE and 990 ft. from SE Sec. 8, Blk. 32, H.&T.C. Sur. — Shut down 800 ft.
Buster Black's No. 1 Hall & Roberts, 990 ft. from NE and 1,650 ft. from NW Sec. 17, Blk. 34, H.&T.C. Sur. — Driving 12½-in. casing; total depth 350 ft.
Clyde Bradford's No. 1 Hardinage and Welsor, 330 ft. from SE and 330 ft. from SW, H.&T.C. Sur. — Drlg. 1,280 ft.
Chester & Smith's No. 1 Booger, 1,200 ft. from SE and 150 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur. — Show gas 2,125 ft.; increase at 2,135 ft.; shut down 2,175 ft.
Central Oil & Gas Co.'s No. 1 Barrow, 330 ft. from NW and 1,263 ft. from SW Sec. 55, J. W. Jackson Sur. — Spudded and shut down.
Gibson & Johnson's No. 1 Johnson, 4,140 ft. from SE and 990 ft. from NE Sec. 10, Blk. 32, H.&T.C. Sur. — Underreaming 12½-in. casing 807 ft.
Gulf Prod. Co.'s No. 3 Wristen Bros, 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur. — Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,515 ft.; plugged back to 2,477 ft.
Hankinson et al's No. 1 Emery, 3,090 ft. from SE and 510 ft. from SW Sec. 26, Blk. 5, H.&T.C. Sur. — Drlg. 510 ft.
Magnolia Pet. Co.'s No.1 Sealy (Atlantic), 2,130 ft. from S and 1,650 ft. from E Sec. 45, Blk. F, G.M.M.B.&A. Sur. — Shut down 2,240 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C. Sur. — Drlg. 4,155 ft.
Peck et al's No. 1 Merrett, 3,166 ft. from NE and 2,648 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. — Shut down 845 ft.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E Sec. 22, Blk. A, G.M.M.B.&A. Sur. — Location.
Shipley et al's No. 5 Hayzlett, 2,490 ft. from SE and 1,980 ft. from SW Sec. 17, Blk. 5, H.&T.C. Sur. — Shut down 2,520 ft.; 1,500 ft. oil in hole.
Simms Oil Co.'s No. 1 Himmel, 330 ft. from NE and 2,310 ft. from SE Sec. 30, Blk. B-29, P.S.L. Sur. — Rigging up.
Sturm's No. 1 Jones, 330 ft. from SW and SE of Sec. 25, Blk. B-29, H.&T.C. Sur. — Location.
California Co. et al's No. 1 Lanham, 990 ft. from NE and SE Sec. 35, Blk. 34, H.&T.C. Sur. — Building rig.
California Co.'s No. 1 Gordon, 330 ft. from NE and SE Sec. 6, Blk. 34, H.&T.C. Sur. — Top pay 2,352 ft.; 300 ft. oil and b.s. in hole; shut down 2,488 ft.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 — Drlg. 3,815 ft.

WINKLER COUNTY

White et al's No. 1 Owenby, 305 ft. from NE and 1,185 ft. from SE Sec. 7, Blk. 32, H.&T.C. Sur. — Shut down 200 ft.
Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-5 — Shut down 4,640 ft.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 42)

Corley and Blair's No. 1 W. E. Bumpers, 150 ft. from E and 150 ft. from S of 10-ac. lease and 20-ac. tract, William H. Castleberry Sur. — Rig up.
Capital Prod. Co.'s No. 1 Osborne, 750 ft. from S line and 1,800 ft. from W line of survey, R. R. Bobbitt Sur. — Drlg. 2,330 ft.
Cranfill & Reynolds' No. 1 G. L. Rembert Co., 150 ft. from N and 150 ft. from E of 166.5-ac. tract and 86-ac. tract, John Ruddle Sur. — Derrick.
Cranfill & Reynolds' No. 1 G. P. McGrede, 328 ft. from S and 250 ft. from W of 16-ac. lease, Dolores Sanches Sur. — Drlg. 2,200 ft.
Cranfill & Reynolds' No. 2 Blackman, 1,040 ft. E of S line of Blackman 40-ac. from SW cor. of same and thence 240 ft. N at right angles, W. P. Chisum Sur. — Drlg. 3,495 ft.
Davis and Russell's No. 1 M. E. Anderson, 150 ft. from E and 75 ft. from S of 3-ac. lease in Kilgore Townsite, Mary Van Winkle Sur. — Fishing 2,568 ft.
Daisy Oil Co.'s No. 1 Mrs. H. B. Ware, 1,000 varas from N and 350 ft. from W of survey, Avery B. Johnson Sur. — Drlg. 2,575 ft.
Delaney et al's No. 1 Homer Clemens, 396 ft. from N and 356 ft. from W of 22½-ac. tract, Dolores Sanches Sur. — Rig up.
Harry Elliott et al's No. 1 Woodley Jones, 2,125 ft. from N line and 3,720 ft. from E line of William H. Castleberry Sur. — Derrick.
Eslick and Little's No. 1 W. R. Nicholson, 1,205 ft. from E and 150 ft. from S of 1,094-ac. tract, Marsh Mann Sur. — Oil sand 3,650-65 ft.
E. A. Eslick et al's No. 2 Springhill Church, 150 ft. from E and 150 ft. from S of 15-ac. lease, W offset to Mid-Kansas, Dolores Sanches Sur. — Drlg. 2,650 ft.
Flannagan Prod. Co.'s No. 1 A. J. Green, 200 ft. from E and 150 ft. from S of 35-ac. tract, G. W. Hooper Sur — Drlg. 1,500 ft.
F. H. E. Oil Co.'s No. 1 Julia Flemister et al, 150 ft. from E and 150 ft. from S of 27.3-ac. tract, G. W. Hooper Sur. — Drlg. 1,200 ft.
Flannery Oil Co.'s No. 1 W. H. York, 150 ft. from S and center E and W of 18½-ac. tract, William Carlton Sur. — Rig up.
Foster and Hay's No. 1 Hawkins, 160 ft. W of S line of Hawkins 325-ac. from SE cor. of same, thence 160 ft. at right angles, W. P. Chisum Sur. — Derrick.
Gibson and Adams' No. 1 Bill Collier, 150 ft. from S and 248 ft. from W of lease, Mary Van Winkle Sur. — Preparing to set csg.
Gulf Production Co.'s No. 1 Della Crim, 1,150 ft. from E of survey and 5,350 ft. N of county line — Location.
Gulf Production Co.'s No. 1 Spear, 150 ft. out of NE cor. of survey, W. P. Chisum Sur. — Location.
Gulf Production Co.'s No. 2 A. Spear, 330 ft. from W and 3,900 ft. from N of survey, Mary Van Winkle Sur. — Location.
Harper Petroleum Corp.'s No. 1 Woodley Jones, 2,000 ft. from N line and 3,900 ft. from E line of William H. Castleberry Sur. — Derrick.
Heydrick et al's No. 1 Lynie McGrede, 1,000 ft. from N and 330 ft. from E of McGrede 187 acres, Dolores Sanches Sur. — Derrick.
H. P. Key's No. 1 King, 150 ft. out of SE cor. of 48-ac. tract, W. P. Chisum Sur. — Shut down 2,110 ft.
M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,800-ac. tract, Martin Lant Sur. — Swabbing.
Houston Oil Co.'s No. 1 J. G. McGrede, 150 ft. from E and 150 ft. from S of 100-ac. lease and W offset to Pilot Oil Co.'s No. 1 McGrede, Dolores Sanches Sur. — Rig up.
Humble Oil & Ref. Co.'s No. 1 J. A. Knowles, 4,150 ft. from W line and 4,150 ft. from S line of survey, Mary Van Winkle Sur. — Derrick.
Hudson and McCamey's No. 1 Smith, 150 ft. S and 150 ft. W of W. Smith 43-ac. tract, J. S. Carrithers Sur. — Drlg. 1,250 ft.
Hunter and Howe's No. 1 Watson, 175 ft. from S and 160 ft. from W of 92-ac. tract, Mary Van Winkle Sur. — Preparing to wash in; T. D. 3,658 ft.
Hurburt and Brown's No. 1 L. L. Mackey, 990 ft. from E and 990 ft. from S of 269-ac. tract, 1,000 ft. from W and 990 ft. from S of survey, G. Y. Chambers Sur. — Shut down 500 ft.
Kimsey-Trimble's No. 1 Griffith Davis, 922 ft. E of N line of Griffin Davis 119.5-ac. tract from NW cor. of same and 145 ft. S at right angles, W. P. Chisum Sur. — Location.
Lloyd Oil Corp.'s No. 2 Andrews, 952 ft. from S line and 339 ft. from W line of S. G. Andrews tract, William Hyde Sur. — Drlg. 2,950 ft.
Leonard Pet. Co.'s No. 1 W. S. Pryor, 200 ft. from S and 200 ft. from W of 152-ac. tract, 2,600 ft. from E and 2,350 ft. from N of survey, Hamilton McNutt Sur. — Derrick.
Lucey Petroleum Corp.'s No. 1 Ranfie Christian, 165 ft. from E line and 160 ft. from S line of 37-ac. lease, G. W. Hooper Sur. — Spudding.
Mazda Oil Co.'s No. 1 W. W. Cotton, 150 ft. out of SE cor. of 33-ac. tract, W. P. Chisum Sur. — Drlg. 3,633 ft.
Marlin Syndicate's No. 1 Springhill School, 1,780 ft. from S and 9,200 ft. from W of survey, Dolores Sanches Sur. — Set 6⅝-in. csg. 3,580 ft.
McMillan Pet. Co.'s No. 1 George Fenton, 150 ft. from S and 150 ft. from W of 1⅛ acres of 20-ac. tract, Dolores Sanches Sur. — Set 6⅝-in. csg. 3,578 ft.
Meck and King's No. 1 Harmony Grove School, 270 ft. from S and 150 ft. from W of 3.7-ac. tract, Mowry Irwin Sur. — Rig up.
Mid-Kansas Oil & Gas Co.'s No. 1 Jack Castleberry, 730 ft. from S and 110 ft. from W of tract, Dolores Sanches Sur. — Building derrick.
Mid-Kansas Oil & Gas Co.'s No. 1 E. M. Nettleton, 150 ft. from S and N offset to Republic's No. 1 Fisher, John Ruddle Sur. — Drlg. 650 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 J. J. Castleberry, 150 ft. from S and 150 ft. from W of most southerly SW cor. tract, Dolores Sanches Sur. — Drlg. 2,465 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Burton, 150 ft. from N and 150 ft. from W of 193.9-ac. tract and survey, Hollingsworth Sur. — Set 315 ft. of 10-in. csg.
John W. Olvey et al's No. 1 Ben Rodden, 187 ft. from N and 187 ft. from E of 10-ac. lease, William Robinson Sur. — Drlg. 3,010 ft.
H. G. Oliphant's No. 1 Willis Smith, 1,569 ft. N and 359 ft. W of SE cor. of Smith 43-ac. tract, J. S. Carithers Sur. — Drlg. 3,170 ft.
Pilot Oil Co.'s No. 1 Maggie Magrill, 125 ft. N and 230 ft. W of most southern SW cor. of Ike Denson tract, Dolores Sanches Sur. — Rigging up.
Pace et al's No. 1 C. Harrell estate, 300 ft. from E line and 150 ft. from N line of 150-ac. tract, A. M. Coleman Sur. — Derrick.
Phillips et al's No. 1 M. T. Cole, 200 ft. out of SW cor. of M. T. Cole 320-ac. tract, Judson Meador Sur. — Drlg. 1,550 ft.
Republic Prod. Co.'s No. 1 Fisher (Rodden), 200 ft. from N and 200 ft. from E of 50 acres of 198-ac. tract, John Ruddle Sur. — Set 6⅝-in. csg.; T. D. 3,449 ft.
Refugio Oil Corp.'s No. 1 Barber, 150 ft. from N line and halfway between E and W line of lease, Warraner Sur. — Location.
Ross et al's No. 1 Fehnear and Thomas, 150 ft. from S line of 6⅝-ac. lease, Charles Alexander Sur. — Location.
Roeser and Pendleton's No. 1 J. R. Fenton, 200 ft. from S and center of E and W of 17-ac. lease, Dolores Sanches Sur. — Rig up.
Roy Roberts et al's No. 1 L. M. Colburn, 150 ft. from E and 150 ft. from S of 45-ac. lease, 5,700 ft. from E and 850 ft. from N of survey, Henry Hathaway Sur. — Derrick.
C. Rosenfield et al's No. 1 J. A. Knowles, 700 ft. from E, 1,250 ft. from N, William Lyles Sur. — Shut down 2,300 ft.
Rush Bros.' No. 1 W. M. Harley, 150 ft. from NE and 150 ft. from SE of 10-ac. lease, William Robinson Sur. — Set 82 ft. of 12½-in. csg.
Shasta Oil Co.'s No. 1 Arthur Christian, 161 ft. from S and 415 ft. from W line of 31-ac. lease, Henry Hathaway Sur. — Drlg. 2,950 ft.
Shell Petroleum Corp.'s No. 1 J. A. Knowles, 556 ft. from S line and 339 ft. from E line of 65-ac. lease, Allen Moore Sur. — Drlg. 3,000 ft.
Smith et al's No. 1 J. B. Doby, 982 ft. from E and 150 ft. from S of 170-ac. tract, William H. Castleberry Sur. — Derrick.
Simms Oil Co.'s No. 1 W. M. Harley, 150 ft. NE and 150 ft. from SE of 10-ac. lease, William Robinson Sur. — Drlg. 2,900 ft.
Sinclair Oil & Gas Co.'s No. 1 M. T. Cole, 2,640 ft. from N and 3,742.2 ft. from W line of survey, Samuel Brooks Sur. — Preparing to run 7-in. csg.; T. D. 3,661 ft.

Smith Ref. Co.'s No. 1 J. A. Knowles, 150 ft. from S, 150 ft. from NW of 75-ac. tract, 5,200 ft. from W, 7,700 ft. from N, Mary Van Winkle Sur. ..... Derrick.
Sun Oil Co.'s No. 2 J. R. Beal, 192 ft. from N and 250 ft. from E line of lease, W. P. Chisum Sur. ..... Location.
Sun Oil Co.'s No. 1 G. W. Tate, 250 ft. from N and 250 ft. from E of 64-ac. lease and tract, William H. Castleberry Sur. ..... Derrick.
Sulten-Daniels et al's No. 1 Springhill School, 430 ft. from E and 980 ft. from S of 15-ac. tract, Dolores Sanches Sur. ..... Making connection; T. D. 3,620 ft.
Sutton et al's No. 1 McNeely, 150 ft. from N and 150 ft. from E of 7.73-ac. tract, W. P. Chisum Sur. .... Drlg. 1,205 ft.
C. S. Thomas et al's No. 1 C. B. Everett, 300 ft. from N and 200 ft. from E of 30.25-ac. tract, John Ruddle Sur. ..... Derrick.
J. Thomas Cox et al's No. 1 Finley and Thomas, 150 ft. from N line and 150 ft. from W line of 3½-ac. lease and 50-ac. tract, Charles B. Alexander Sur. .... Derrick.
Texas Pacific Coal & Oil Co.'s No. 1 fee, 330 ft. from S and 330 ft. from W tract and survey, George Hampton Sur. ..... Derrick.
Vierson's No. 1 McElroy, 150 ft. out of NW cor. of E 30 acres of 60-ac. tract, J. S. Carithers Sur. ..... Location.
Paul Vitek et al's No. 1 Louise Osborne, 150 ft. from E, 150 ft. from S and W 46 acres of 84-ac. tract, 2,000 ft. from W, 450 ft. from S, R. R. Bobbett Sur. ..... Shut down 1,130 ft.
James A. Weir Drlg. Co.'s No. 1 J. G. McGrede, 298 ft. from E and 155 ft. from S of Lot No. 3, Dolores Sanches Sur. ..... Spudding.
Wise and Jackson's No. 1 F. J. Glover, 350 ft. from N and 125 ft. from E line of survey, George Melton Sur. ..... Derrick.
H. M. Wages et al's No. 1 Finley and Thomas, 165 ft. from E and 150 ft. from S of 10-ac. lease, Charles H. Alexander Sur. ..... Drlg. water well.
Wise and Jackson's No. 1 Wash Dickey, 330 ft. from S and 200 ft. from E of survey, W. H. Johnson Sur. ..... Drlg. 1,153 ft.
Woodley Petroleum Co.'s No. 1 Laura Walker et al, 275 ft. from E and 235 ft. from S of 45-ac. tract, Dolores Sanches Sur. ..... Rig up.
Woodlett et al's No. 1 W. M. Harley, 150 ft. from NE and 150 ft. from SE of 10-ac. tract, William Robinson Sur. ..... Testing; T. D. 3,578 ft.
Whitney-Cowanaugh's No. 1 Ben Watson, 300 ft. E of Marine Oil Co.'s No. 1 Art Mitchell, J. S. Cathers Sur. ..... Drlg. 2,785 ft.
Yount Lee Oil Co.'s No. 1-B R. S. McKinley, 1,993 ft. from S and 2,440 ft. W of NE cor. of 212-ac. tract, William Robinson Sur. ..... Derrick pattern.
Yount Lee Oil Co.'s No. 1 Isaac Denson, 360 ft. from S and 684 ft. from W of 64-ac. tract, Dolores Sanches Sur. ..... Rig up.
Yount Lee Oil Co.'s No. 1 C. E. Fenton, 619 ft. from E line and 742 ft. from S line of 84-ac. tract, Dolores Sanches Sur. ..... Derrick.
Yount Lee Oil Co.'s No. 1 Bun Rodden, 610 ft. from N and 215 ft. from W of 22-ac. tract, William Robinson Sur. ..... Rig up.
Yount Lee Oil Co.'s No. 1 Thrasher and Stuckey, 309 ft. from N line and 331 ft. from E line of 80-ac. lease, G. W. Hooper Sur. ..... Derrick.

LAMAR COUNTY

K. O. Bundy et al's No. 1 La Gatle, 200 ft. from N and 500 ft. from E of La Gatle tract, John V. Cherry Sur. ..... Moving in rig.
Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Drlg. 2,416 ft.

NACOGDOCHES COUNTY

Fuhram et al's No. 1 Robert Mattaner, NW cor. of 520-ac. tract, J. A. Cherino grant ..... Rig up.
J. C. McNeil et al's No. 1 Hayter estate, 1,000 ft. E of Laco Creek and 300 ft. S of Nacogdoches and Jacksonville Highway De Las Santos-Coy Sur. ..... Drlg. 50 ft.

RAINS COUNTY

Berry and Hale's No. 1 Ownsby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ..... Rig up.
Westbrook Oil Co.'s No. 1 William Cates, 150 ft. N and W of NW cor. of E. S. Knight 46-ac. tract and on Cates 266-ac. tract, Calvin Gage Sur. ..... Drlg. 3,212 ft.

RED RIVER COUNTY

Everett & Allen's No. 1 Bryan, 1,200 ft. SW of NE cor. of Bryan 130 acres, P. Vaughn Sur. ..... Moving in rig.
Everett & Allen's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tract, William Humphreys Sur. ..... Drlg. 50 ft.
Droppleman and Bunnely's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 180-ac. tract, S. B. Shi Sur. ..... Shut down 2,747 ft.
Pearsons et al's No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ..... Spudded and shut down.

KILGORE AREA—RUSK COUNTY

Abercrombie's No. 1 E. Cantrell, 740 ft. from W line of Cantrell 53-ac. tract in Robert W. Smith Sur., and 148 ft. from S line ..... Drlg. 2,678 ft.
Beard and Hammond's No. 1 J. S. Bean, 233 ft. from N and 150 ft. from W of S 10 acres of 20-ac. tract, J. Lewis Sur. ..... Top sand 3,615 ft.; T. D. 3,622 ft.
Burton Drlg. Co.'s No. 2 E. B. S. Florey, 900 ft. from N line and 115 ft. from E line of 50-ac. tract, Peter Holmes Sur. ..... Fishing; T. D. 3,570 ft.
Burton Drlg. Co.'s No. 3 E. B. S. Florey, 250 ft. out of NE cor. of Burton Florey 50-ac. lease, Peter Holmes Sur. ..... Location.
Cordova Union Oil Co.'s No. 5 C. O. Christian, 2,100 ft. from W and 1,700 ft. from N of survey, Robert E. Winn Sur. ..... Preparing to drill in; T. D. 3,650 ft.
Cox and Hamon's No. 3 D. M. Peterson, 150 ft. from N and W lines of 40-ac. tract, Isaac Ruddle Sur. .. Moving in material.
Cromwell et al's No. 1 C. J. Bradberry, 565 ft. from S line of Bradberry 112-ac. tract and 154 ft. from E line of Robert W. Smith Sur. ..... Drlg. 2,040 ft.
Curtis and Loe's No. 1 J. S. Bean, 1,650 ft. from S, 200 ft. E of NW cor. of 314-ac. tract and lease, 4,925 ft. from S, 1,075 ft. from W. J. Lewis Sur. .. Drlg. 2,650 ft.
Danciger Oil & Refining Co.'s No. 1 Carlos Bean, 150 ft. from W and 300 ft. from S line of lease, Isaac Ruddle Sur. ..... Top sand 3,605 ft.; T. D. 3,685 ft.
East Texas Refining Co.'s No. 1 Wills, 723 ft. from N and 250 ft. from S, 150 ft. from W of 83.24-ac. lease, W. P. Chisum Sur. ..... Drlg. plug; T. D. 3,692 ft.
East Texas Refining Co.'s No. 2 Wills, 200 ft. from N and 150 ft. from E of 80-ac. lease, W. P. Chisum Sur. ..... Top sand 3,672 ft.; T. D. 3,687 ft.
Harry Elliott's No. 1 Carroll, 175 ft. from N and 200 ft. from E of 7-ac. tract, W. R. Cook Sur. ..... Location.
H. W. Elliott's No. 1 Ferrell, 150 ft. from N and 150 ft. from E of 8-ac. tract, W. M. Ryan Sur. ..... Drlg. 3,660 ft.
Elsy Drlg. Co.'s No. 1 George Thompson, 150 ft. from N, 150 ft. from E of tract of 70 acres and 10-ac. lease, 400 ft. S, 500 ft. W, Henry Dobson Sur. ..... Drlg. 1,210 ft.
Gulf Production Co. and Devonian's No. 1 W. L. Laird, 150 ft. from E and 150 ft. from S of 60-ac. tract, Isaac Ruddle Sur. ..... Top sand 3,605 ft.; T. D. 3,609 ft.
Gulf Production Co.'s No. 2 Brightwell, 330 ft. out of NE cor. of lease, Robert E. Winn Sur. ..... Set 6⅝-in. csg.; T. D. 3,652 ft.
Gulf Production Co.'s No. 1 Russell, 150 ft. from the N and W lines of the S R. W. Smith Sur. ..... Location.
Helis and Collin's No. 1 Birdsong, 150 ft. S of railroad and midway between the E and W lines of the 5-ac. tract in the I. Ruddle Sur. ..... Location.
Hill and Brown's No. 1 J. N. Peterson, 150 ft. from N and E of the S 41.56-ac. tract of the 56.25-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,500 ft.
Houston Production Co.'s No. 1 W. R. Brightwell, 984 ft. N and 287 ft. W of NW cor. of W. Brock heirs 595-ac. tract, E. G. Sevier Sur. ..... Drlg. 2,855 ft.
Houston Oil Co.'s No. 1 Dora Wells, 150 ft. out of NE cor. of 25-ac. lease, Henry Hobson Sur. ..... Drlg. 1,687 ft.
Houston Oil Co.'s No. 1 Brightwell, 150 ft. from N and 150 ft. from E lines of tract, Robert E. Winn Sur. ..... Drlg. 2,916 ft.
Humble Oil & Ref. Co.'s No. 1 R. H. Laird, 150 ft. from N and 200 ft. from E line of 40-ac. lease, Isaac Ruddle Sur. ..... Drlg. 2,167 ft.
M. W. Hunter's No. 2 Buntyn, 600 ft. E of S line of E. Cantrell 53-ac. tract from SW cor. of same and 142 ft. south at right angles, J. C. Snow Sur. ..... Top sand 3,642 ft.; T. D. 3,682 ft.
E. M. Jones' No. 1 Wells, 248 ft. from N and 150 ft. from W of 41.6-ac. lease, W. P. Chisum Sur. ..... Top sand 3,674 ft.; T. D. 3,676 ft.
Killum and Reed's No. 1 Lou Emma Price, 150 ft. from N and 550 ft. from E line of the W. Brock heirs 59.5-ac. tract, William Chisum Sur. ..... Top sand 3,645 ft.; shut down 3,720 ft.
Killerman and Hind's No. 1 Brock heirs, 460 ft. S and 150 ft. W of the NW cor. of the Houston Oil Co.'s 20-ac. Brightwell lease, Robert W. Smith Sur. ..... Drlg. 1,800 ft.
Captain Lucey's No. 1 Maxwell, 600 ft. N and 200 ft. W of SW cor. of John Darley Sur. in the E. Collard Sur. ..... Drlg. 1,590 ft.
Lewis and Perkins' No. 1 Brock heirs, 150 ft. from the N and E lines of the R. W. Smith Sur. ..... Drlg. 1,630 ft.
Lewis and Selby's No. 1 Peagues, 150 ft. from the N and W lines of the George Cooper Sur. ..... Location.
Magnolia Pet. Co.'s No. 1 Bradbury, 150 ft. from the S and E lines of the lease in the N Robert W. Smith Sur. ..... Location.
Magnolia Pet. Co.'s No. 2 Dick Wells, W offset to Madden et al's No. 1 Mayfield in the Henry Hobson Sur. ..... Location.
Magnolia Pet. Co.'s No. 1 Florey, 150 ft. from N and E lines of tract, Peter Holmes Sur. ..... Plugging back.
Magnolia Petroleum Co.'s No. 1 C. C. Still, 150 ft. from N and E lines of 100-ac. tract, Meredith McCabe Sur. ..... Shut down.
McMan Oil & Gas Co.'s No. 1 S. S. Laird, 300 ft. out of SE cor. of 11.45-ac. lease, Robert W. Smith Sur... Preparing to drill plug; T. D. 3,653 ft.
Moser's No. 1 Buntyn, 554 ft. from N and 325 ft. from E of survey, the most northeasterly cor. of survey, J. C. Snow Sur. ..... Rig up.
Moody-Seagraves' No. 1 Buntyn, 485 ft. S and 330 ft. W from the most western NW cor. of the Rosa Russell 126-ac. tract in the J. C. Snow Sur. ..... Location.
Moody-Seagraves' No. 1 J. H. Palmer, 150 ft. out of NE cor. of lease, S offset to Markham and Dunning's No. 3 or 5-E Peterson, Robert E. Winn Sur. .. Drlg. 3,570 ft.
H. v. Oliver and Brown Drlg. Co.'s No. 1 B. F. Hindman, 150 ft. from N, 150 ft. from E of 5-ac. tract, 850 ft. from E, 3,150 ft. from N, Robert Smith Sur. .. Top sand 3,606 ft.; T. D. 3,620 ft.
Republic Production Co.'s No. 1 Bean, 1,150 ft. from the N and 50 ft. from the W lines of the J. Lewis Sur. ..... Location.
Republic Production Co.'s No. 1 Christian, 1,850 ft. from the N and 920 ft. from the W lines of the N. Robert W. Smith Sur. ..... Location.
Shell Pet. Corp.'s No. 1 Wills, 200 ft. from N and 200 ft. from W of 182-ac. tract, W. P. Chisum Sur. ..... Set 6⅝-in. csg.; T. D. 3,661 ft.
Sun Oil Co.'s No. 1 Ed Barker, 200 ft. from E and 200 ft. from S of 77-ac. lease, A. M. Ryan Sur. .... Drlg. 3,185 ft.
Sun Oil Co.'s No. 1 Beal, 200 ft. from W and 200 ft. from S of Beal 180-ac. tract, W. P. Chisum Sur. ... Drlg. 2,630 ft.; top Pecan Gap 2,570 ft.
Sun Oil Co.'s No. 1 A. A. King, 225 ft. out of SE cor. of A. A. King 100-ac. lease, Peter Holmes Sur. ..... Location.
Sun Oil Co.'s No. 1 W. D. Tucker, 1,475 ft. N and 150 ft. from E line of W. D. Tucker 306.53-ac. lease, Peter Holmes Sur. ..... Location.
Stanolind Oil & Gas Co.'s No. 2 W. R. Terrell, 431 ft. from N and 393 ft. from E line of lease, E. G. Sevier Sur. ..... Shut down 225 ft. to set 12½-in. csg.
Stanolind Oil & Gas Co.'s No. 1 W. R. Terrell, 327 ft. S and 275 ft. from W of 50-ac. lease, E. G. Sevier Sur. ..... Coring 3,670 ft.
Stanolind Oil & Gas Co.'s No. 1 Beal, 300 ft. from the S and W lines of the lease, W. P. Chisum Sur. ..... Location.
Stanolind Oil & Gas Co.'s No. 1 J. S. Powers, 330 ft. from the N and E lines of the John Womack Sur. ..... Location.
Stroube and Stroube's No. 1 Lilly Morse, 300 ft. W from East Texas Loan & Investment's No. 1 Lilly Morse, Robert W. Smith Sur. ..... Location.
Turman Oil Co.'s No. 2 W. P. Brightwell, 150 ft. out of NW cor. of 30-ac. lease, Robert E. Winn Sur. ..... Top sand 3,633 ft.; T. D. 3,635 ft.
Ward et al's No. 1 H. P. Leverett, 150 ft. out of the NW cor. of the 38-ac. tract, Meredith McCabe Sur. .. Set 6⅝-in. csg. 3,655 ft.; T. D. 3,680 ft.
Weaver-Crim Corp.'s No. 1 Dave Ladd, 150 ft. from the S and W lines of tract, N offset to Woodley's No. 1 Ladd, Henry Hobson Sur. ..... Drlg. 2,900 ft.
Woodley Pet. Corp.'s No. 1 George Thompson, 150 ft. from N line and center of E and W lines of Woodley 10-ac. lease of George Thompson 70-ac. tract, Robert E. Winn Sur. ..... Drlg. 2,980 ft.

JOINER POOL—RUSK COUNTY

Arkansas Fuel Oil Co.'s No. 1 John Whelis, 200 ft. from the N and E lines of the Whelis tract in the R. H. Pinney Sur. ..... Location.
Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N, 429 ft. from E of SE cor., B. Smith Sur. ..... Derrick.
Anderson's No. 1 Giles, 1,900 ft. from E and 4,600 ft. from N of survey, M. J. Prue Sur. ..... Drlg. 3,745 ft.
Armstrong and Pitt's No. 1 Cooper, 2,150 ft. from W and 166 ft. from N of survey ..... Rig up.
Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ..... Derrick.
Big Indian Oil Co.'s No. 1 Deason, 360 ft. from E and 4,100 ft. from S of survey, M. J. Prue Sur. ..... Sidetracking.
Berry-Lewis' No. 1 Thompson, 291 ft. from N and 2,955 ft. from W of M. L. Thompson 129 acres, M. J. Prue Sur. ..... Shut down 1,320 ft.
Campbell Oil Co.'s No. 1 Compton, 600 ft. from the N and W line of the Simon Del Rio Sur., 1½ miles NW of Minden ..... Location.
Consolidated Oil Co.'s No. 3 Jobe, 4,500 ft. from W and 3,160 ft. from N of survey, Juan Ximenes Sur. ..... T. D. 3,685 ft.
Consolidated Oil Co.'s No. 4 Jobe, 5,025 ft. from W and 3,160 ft. from N of survey, Juan Ximenes Sur. ..... Swabbed dry through csg.
E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parker Sur. ... Waiting on csg.
Cranfill & Reynolds' No. 1 Cox, 3,100 ft. from E and 1,500 ft. from S of survey, R. H. Pinney Sur. ..... Drlg. 3,628 ft.
Dan Brooks, trustee's No. 1 Alford, 1,000 ft. from E and 200 ft. from S of Alford 100-ac. tract, J. R. Reel Sur. ..... Top Georgetown lime 3,535 ft.

Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E, 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.
Danciger's No. 1 Deason, 3,925 ft. from S and 650 ft. from W of survey, Juan Ximenes Sur. ..... Drlg. 2,030 ft.
Devonian Oil Co.'s No. 1 Milstead, 200 ft. from the S and E lines of the J. B. Milstead 90.4-ac. tract in the R. H. Pinney Sur. ..... Location.
Elliott's No. 1 Alford, 445 ft. N and 194 ft. W of most westerly SW cor. of J. P. Maxwell 144-ac. tract, I. G. Parker Sur. ..... Rig up.
Elsy and Tautenham's No. 1 Deason, 1,300 ft. from W and 3,700 ft. from S of survey, Juan Ximenes Sur. .. Set 10-in. csg. 180 ft.
Elsy Drlg. Co.'s No. 1 Frederick, 150 ft. from S and 603 ft. from W of Frederick 90-ac. tract, Juan Ximenes Sur. ..... Location.
East Texas Oil Co.'s No. 1 C. D. Ashby, 856 ft. N, 1,774 ft. from W of Ashby 119-ac. tract, Juan Ximenes Sur. ..... Shut down 2,160 ft.
Fitzsimmon's No. 1 Alford, 428 ft. from S and 4,500 ft. from W of survey, I. G. Parker Sur. ..... Coring 3,682 ft.
Foster and Jefferies' No. 1 Giles, 1,000 ft. from the N and 150 ft. from the E lines of the Giles 90 acres in the M. J. Prue Sur. ..... Location.
Green Pine Oil Co.'s No. 1 E. A. Thrash, 150 ft. from the S and E lines of the Thrash tract in the Juan Ximenes Sur. ..... Location.
Gulf Production Co.'s No. 1 T. B. Cashem, 330 ft. from the S and E lines of 95-ac. tract in the Henry B. Dance Sur. ..... Location.
Gulf Production Co.'s No. 1 O'Quin, 330 ft. from the N and E lines of 54-ac. tract in the George Berry Sur. ..... Location.
Greely and Baker's No. 1 Thrash, 2,600 ft. from W and 1,850 ft. from N of survey, Juan Ximenes Sur. ..... Drlg. 2,200 ft.
Griffith's No. 1 J. F. Lowe, 800 varas E of W line and 200 varas S of N line of 268-ac. tract, William Williams Sur. ..... Drlg. 3,131 ft.
Gulf Production Co.'s No. 1 Cash, 6,600 ft. from S and 3,800 ft. from E of survey, F. Cordova Sur. ..... Drlg. 1,702 ft.
Haynes et al's No. 1 T. R. M. Lee, 3,300 ft. from W and 5,000 ft. from S of survey, M. J. Prue Sur. ..... Set 10-in. csg.; T. D. 58 ft.
John W. Hoosier's No. 1 L. Taliaferro, 1,250 ft. from W and 3,250 ft. from N of survey, Juan Ximenes Sur. ..... Coring 3,634 ft.
W. M. Hobson's No. 1 Wilson, 335 ft. from the N and 354 ft. from the W lines of 31.2-ac. lease in the M. J. Prue Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 1 M. L. Thompson, 6,150 ft. from E and 1,850 ft. from N of survey, M. J. Prue Sur. ..... Drlg. 1,625 ft.
Humble Oil & Ref. Co.'s No. 1 Plowman, 163 ft. from S and 1,074 ft. E of NW cor. of M. L. Thompson 129.6-ac. tract, F. Cordova Sur. ..... Building derrick.
H. L. Hunt's No. 1 Fair, 150 ft. from N and 180 ft. from W of Fair tract, Richard McAlnulty Sur. .... Drlg. 3,081 ft.
Kimbrough et al's No. 1 Weatherby, 300 ft. from N and 300 ft. from E, Robert Martin Sur. ..... Drlg. 2,650 ft.
Lide et al's No. 1 Deason, 2,200 ft. from E and 1,250 ft. from S of survey, M. J. Prue Sur. ..... Shut down 3,526 ft.
E. C. Laster's No. 1 Daisy Bradford, 150 ft. from E, 150 ft. from S of Lot 14, Juan Ximenes Sur. ..... Location.
Laster et al's No. 1 Maxwell, 3,000 ft. from E and 623 ft. from N of survey, I. G. Parker Sur. ..... Sand 3,552-66 ft.; total depth.
Luling Oil & Gas Co.'s No. 1 Frederick, 4,300 ft. from W and 1,425 ft. from N of survey, Juan Ximenes Sur. ..... Swabbed dry; won't flow; shut
Madden et al's No. 1 Mose Mayfield, 960 ft. from the S and 160 ft. from W line of 154-ac. lease, Daniel Clark Sur. ..... Waiting on csg.; T. D. 3,708 ft.
Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartimas Sur. ..... Drlg. 2,990 ft.
Merrick Oil Co.'s (Gibson & Johnson) No. 1 Ashby, 125 ft. from E, 125 ft. from S of Ashby 45-ac. tract, Juan Ximenes Sur. ..... Recementing crooked hole; T. D. 3,725 ft.
Merritt et al's No. 1 Cooper, 155 ft. from E and 170 ft. from S of most easterly SE cor. of T. J. Moore Sur. ..... Top Georgetown lime 3,668-82 ft.; drill stem test 20 fourbles oil and mud; T. D. 3,682 ft.
Moss and Urschel's No. 2 Mayfield-Alford, 211 ft. from S and 790 ft. from W of lease, Juan Ximenes Sur. ... Top Georgetown lime 3,747-50 ft.; preparing to swab.
John Mabee's No. 1 W. P. Brett, 1,150 ft. from E and 2,200 ft. from N of survey, M. J. Prue Sur. ..... Drlg. plug; top sand 3,693 ft.
G. B. Mitchell et al's No. 1 Ras Pool, 2,700 ft. from E and 4,275 ft. from N of survey, M. J. Prue Sur. .... Shut down 3,551 ft.
J. R. McMurray's No. 1 Blackwell, 355 ft. from S and 159 ft. from W of Blackwell 92-ac. tract, M. J. Prue Sur. ..... Drlg. 1,880 ft.
National Drlg. Co.'s No. 1 Young, 585 ft. N and 138 ft. W of NW cor. of Lide-Rowe's 30-ac. lease, M. J. Prue Sur. ..... Rig up.
Nat Saddler's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... Set 8-in. csg.; T. D. 1,267 ft.
Olsen Bros.' No. 1 W. P. Brett, 2,350 ft. from E and 975 ft. from N of survey, M. J. Prue Sur. ..... Spudding.
Pace et al's No. 1 Deason, 730 ft. from N and 152 ft. from W of Deason East 52-ac. tract, M. J. Prue Sur. ..... Set 10-in. csg. 185 ft.
Pilot Oil Co.'s No. 1 J. E. Thrash, 205 ft. from N and 650 ft. from E of 62-ac. tract, F. Cordova Sur. .... Derrick.
G. Pollard's No. 1 Young, 586 ft. S and 152 ft. W of NW cor. of Lide 30-ac. lease, M. J. Prue Sur. ..... Drlg. 2,165 ft.
Pharis and Sample's No. 1 Deason, 1,558 ft. E and 155 ft. S of SE cor. of H. Brooks tract in M. J. Prue Sur. ..... Drlg. 2,700 ft.
Phillips Petroleum Co.'s No. 1 Alford, 3,700 ft. from W and 60 ft. from S of survey, I. G. Parker Sur. ... Swabbed, will not flow; shut down.
Phillips Petroleum Co.'s No. 1 Wilson, 142 ft. from E and 136 ft. from S of Phillips 51-ac. tract, M. J. Prue Sur. ..... Drlg. 1,330 ft.
Pioneer Oil Co.'s No. 3 Thrash, 1,275 ft. N along E line of A. Thrash 71-ac. tract from SE cor. of same and 485 ft. W at right angles to E line, M. J. Prue Sur. ..... Derrick.
Pioneer Oil Co.'s No. 4 Thrash, 1,900 ft. from E and 4,725 ft. from S of survey, M. J. Prue Sur. ..... Location.
George Ray et al's No. 1 Thompson, 6,200 ft. from E and 1,600 ft. from N of survey, M. J. Prue Sur. .... Drlg. 2,995 ft.
W. G. Ray Drlg. Co.'s No. 1 Wilson, 335 ft. from S and 340 ft. from W of lease, Richard McAlnulty Sur. ..... Drlg. 2,750 ft.
Ramsey Petroleum Co.'s No. 1 Kangerga, 150 ft. E and S from the most southern SE cor. of Walker Pettett Sur., 3 miles W of Capps and Smith's No. 1 Cochran ..... Location.
Rowe et al's No. 1 Maxwell, 855 ft. from E and 237 ft. from S of B. F. Maxwell 59-ac. tract, R. H. Pinney Sur. ..... Derrick.
Robertson Drlg. Co.'s No. 1 Deason, 3,400 ft. from S and 1,800 ft. from W of survey, Juan Ximenes Sur. .... T. D. 3,630 ft.; set 6-in. csg. 3,600 ft.
Roeser and Pendleton's No. 1 Glenn Pool, 1,170 ft. from N and 200 ft. from E of 31-ac. lease, M. J. Prue Sur. ..... Drlg. 2,900 ft.

Rusk County Oil Co.'s No. 1 Robertson, 150 ft. from N along W line of George Guthrie Sur. from SE cor., 150 ft. W of E line of Robertson 20-ac. tract, R. H. Pinney Sur. ..... Shut down 1,363 ft.
Stokes et al's No. 1 Mrs. M. M. Talley, 4,100 ft. from W and 1,050 ft. from N of survey ..... Moving in rig.
Sun Oil Co.'s No. 1 S. A. Selman, 150 ft. from N and 150 ft. from E of 50-ac. tract, M. J. Prue Sur. ..... Set 6-in. 3,660 ft.; T. D. 3,680 ft.
Shaw Oil Co.'s No. 1 Ras Pool, 1,630 ft. from N and 153 ft. from E of Pool tract, M. J. Prue Sur. ..... Drlg. 2,680 ft.
Shaw Oil Co.'s No. 1 Taliaferro, 150 ft. from S and 643 ft. from W of Taliaferro 52-ac. tract, Juan Ximenes Sur. ..... Drlg. 2,825 ft.
Sinclair Oil & Gas Co.'s No. 1 Wilson, 335 ft. from N and 354 ft. from E of lease, Richard McAlnulty Sur. ..... Spudding.
Suttle's No. 2 Holland, 156 ft. from N and 152 ft. from W of Holland 41.7-ac. tract, M. J. Prue Sur. ..... Derrick.
Turman and Swift's No. 1 S. E. Sanders, 712 ft. S and 164 ft. E of NW cor. of 55.1-ac. tract, T. J. Martin Sur. ..... Drlg. 2,602 ft.
Vitek's No. 1 Jobe, 2,950 ft. from W and 3,260 ft. from N of survey, Juan Ximenes Sur. ..... Set 12½-in. csg. 206 ft.
Ward Oil Co.'s No. 1 Finney, 163 ft. from E and 150 ft. from S of survey, F. Cordova Sur. ..... Drlg. 2,480 ft.
Ward Oil Co.'s No. 1 Cox, 1,700 ft. from W and 1,450 ft. from N of survey, R. H. Pinney Sur. ..... Set 6-in. csg.; T. D. 3,732 ft.
Williams and Dunning's No. 1 Young, 4,400 ft. from E and 2,450 ft. from S of survey, M. J. Prue Sur. .. Preparing to swab; T. D. 3,726 ft.

SMITH COUNTY

Big Indian Oil Co.'s No. 1 Mills, 1,045 ft. E along S line of C. Mills 67.8-ac. farm, SW cor. of same and 710 ft. N at right angles to S line of 67.7 acres, J. Jordan Sur. ..... Derrick.
G. B. Bunte, trustee's No. 1 A. S. Jarvis, 150 ft. from S and 150 ft. from W of 267-ac. tract, Juan Vargus Sur. ..... Rig up.
East Texas Ref. Co.'s No. 1 Tyiska, 200 ft. from E and 200 ft. from S of survey, R. Wilson Sur. ..... Drlg. 1,100 ft.
Howard Petroleum Co.'s No. 1 Lee Holt estate, 6,000 ft. from N and 1,000 ft. from S of survey, Barnes Clark Sur. ..... Drlg. 3,810 ft.
Joiner et al's No. 1 W. W. Wright, 847.5 varas from E and 647 varas from S of NW Wright 226-ac. tract, Van Sickle Sur. ..... Coring 2,991 ft.
Guy Lewis' No. 1 A. Wright, 125 ft. from N and 150 ft. from E of R. Wright 100-ac. tract, Maria Gertruds Sur. ..... Rig up.
Morrison's No. 1 I. Roy, 330 ft. N and E from the SW cor. of 87-ac. tract in the Henry Cools Sur. ..... Drlg. 1,345 ft.
Sinclair Oil & Gas Co.'s No. 1 Armond Wiley, 1,163 ft. from N and 3,140 ft. from W of 312.11-ac. lease, James Jordan Sur. ..... Sand 3,855-58 ft.; run csg.
Sinclair Oil & Gas Co.'s No. 1 Mayfield, 2,194 ft. from N and 3,625 ft. from W of 376-ac. Mayfield lease, James Jordan Sur. ..... Derrick.
Sinclair Oil & Gas Co.'s No. 2 Mayfield, 855 varas from N and 758 varas from W of Mayfield 376.4-ac. tract, James Jordan Sur. ..... Drlg. 3,065 ft.
Sun Oil Co.'s No. 1 J. J. Denton, 250 ft. from the N and 288 ft. from the E lines of 114.2-ac. tract in the Juan Vargas Sur. ..... Location.
Sun Oil Co.'s No. 1 J. Henson, 250 ft. from the N and 239 ft. from the E lines of 216-ac. tract in the Juan Vargas Sur. ..... Location.
The Texas Company's No. 1 Blackwell, 330 ft. from S and 330 ft. from W of Blackwell 100-ac. lease, James Jordan Sur. ..... Drlg. 1,700 ft.
Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Shut down 2,400 ft.
Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,681 ft.
Witherspoon Oil Co.'s No. 1 T. O. Wright, 150 ft. from NE cor. of Sinclair-Wilson lease, 1,340 ft. from W and 225 ft. N at right angles, Juan Vargas Sur. .... Drlg. 3,265 ft.

UPSHUR COUNTY

Arcadia Refining Co.'s No. 1 R. S. Johnson, 1,000 ft. from N and 1,000 ft. from E of survey, J. H. Mallory Sur. ..... Derrick.
Brennan and Wood's No. 1 Robertson, center of Robertson 41-ac. tract, Ira Stephenson Sur. ..... Drlg. 2,510 ft.
Mudge Oil Co.'s No. 1 J. D. Richardson, 150 ft. from E and 150 ft. from S of most eastern SE cor. of 100-ac. tract, David Ferguson Sur. ..... Sand 3,710-15 ft.; T. D. 3,715 ft.
E. R. Perkins et al's No. 1 Ksy, 660 ft. from S and 660 ft. from W of survey, Thomas J. Elliott Sur. .... Shut down 200 ft.

VAN ZANDT COUNTY

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abandoned.
Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E line of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abandoned.
J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Fishing 5,160 ft.
H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 3,098 ft.
Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. ..... Temp. abnd. 2,987 ft.
Humble Oil & Ref. Co.'s No. 1 York, 150 ft. from E and 175 ft. from S, William Daniel Sur. ..... Drlg. 2,050 ft.
Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.
Kelly Oil & Gas Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... Shut down 2,300 ft.
Nell McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Shut down 2,450 ft.
Pure Oil Co.'s No. 3 Ella York, 250 ft. S of N line and 250 ft. E of W line, John Walling Sur. ..... Cement setting 2,828 ft.
Pure Oil Co.'s No. 2 Shivers, 200 ft. S of N line and 200 ft. E of W line of lease, John Walling Sur. .... Location.
Pure Oil Co.'s No. 3 W. H. Cook, 200 ft. W of most easterly E line and 150 ft. from line running in NE and SW directions, Mund Gross Sur. ..... Location.
Pure Oil Co.'s No. 4 A. G. Mayfield, 1,163 ft. N of S line and 250 ft. E of W line in Nacogdoches County School Land ..... Location.
Pure Oil Co.'s No. 5 C. H. Cannon, 70 ft. S of N line and 150 ft. W of E line of 4-ac. tract in John Walling Sur. ..... Location.
Pure Oil Co.'s No. 3 R. C. Crim, 250 ft. N of S line and 250 ft. W of E line of lease in Nacogdoches County School Land Sur. ..... Location.
Pure Oil Co.'s No. 6 F. B. Smith, 250 ft. S of N line and 200 ft. W of E line of lease in John Walling Sur. ..... Location.
Pure Oil Co.'s No. 1 B. W. Russell, 650 ft. W of E line and 150 ft. S of N line of lease in David Rose Sur. ..... Location.
Roy Stumpff's No. 1 Riggs, 169 ft. from E and 155 ft. from S of 3-ac. tract, William Daniel Sur. ..... Derrick (rotary).
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... Shut down 1,028 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

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Naylor SPIRALWELD Pipe

The "SPIRALWELD"
The lock-seam takes the load, thereby relieving the weld of any stress, the weld being only a seal.
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■ This exclusive structure of Naylor SPIRALWELD Pipe consists of a continuous electrically welded spiral lock-seam truss extending the full length of the pipe.

■ The Naylor spiral truss structure provides maximum structural strength with minimum weight, thus enabling Naylor SPIRALWELD Pipe to be used for the same pressures as standard weight wrought pipe, while reducing pipe weight 50%. Light weight means lower transportation, handling and laying costs!

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SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 40)

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities Co.'s No. 6 Chittim, Sec. 116, Blk. 7, I.&G.N. Sur. ..... T. D. 5,538 ft.; waiting for supplies.

AGUA DULCE FIELD—NUECES COUNTY

Houston Oil Co.'s No. 1-B Ollie Purl ..... T. D. 6,010 ft.; drlg.

SAXET FIELD—NUECES COUNTY

Houston Oil Co.'s (Andy Bowen) No. 1 Prieur, H. B. Sheppard Sur. ..... T. D. 1,465 ft.; waiting for csg.
W. L. Pearson Properties' No. 1 Dunn, 300 ft. S of Bay.. Shut down 2,600 ft.

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Pet. Co.'s No. 3 Wilson, 330 ft. from N, 1,720 ft. from W line of Sur. No. 134 ..... Rigging up.
The Texas Company's No. 1 Bishop Duval Land Co., 330 ft. from S and 1,520 ft. from W line of Sur. No. 135 ..... Rigging up.

WHITE POINT FIELD—SAN PATRICIO COUNTY

United Production Co.'s No. 3 Cage ..... T. D. 3,035 ft.; drlg.
Saxet Oil Co.'s No. 4 White Point ..... T. D. 4,350 ft.; drlg.

PRYOR FIELD—ZAVALA COUNTY

Texas Gas Utilities' No. 4 Pryor, 1,000 ft. NW of No. 3 Pryor ..... Location.

LAREDO DISTRICT

KOHLER POOL—DUVAL COUNTY

Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164 ..... T. D. 6,045 ft.; drlg.

COLE POOL—DUVAL COUNTY

Southern Oil Co.'s No. 2 Kings-Harper, 1,794 ft. E line, 729 ft. N line of Sur. 323 ..... Location.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 634 ..... T. D. 2,655 ft.; comp. 75 bbls.
Carolina-Texas Oil & Gas Co.'s No. 9 Barnsley Sur. No. 268 ..... T. D. 1,989 ft.; drlg.

JENNINGS-MUCKELROY POOL—ZAPATA COUNTY

O. & A. Co.'s No. 3 Garcia, Share 3, Fansler's Subd. ..... T. D. 1,229 ft; comp. 100 bbls.
E. C. Brogan's No. 1 Montemeyor, Blk. 11, Sur. 64 ..... T. D. 1,000 ft.; drlg.
Nordan & Morris' No. 1 Jose Bustamente, 750 ft. NE line, 200 ft. NW line, Share 35, Comitas grant ..... T. D. 1,451 ft.; drlg.
P. H. Meyers' No. 1 Trevino, Sur. 412 ..... T. D. 1,914 ft.; abnd.
J. I. Newton's No. 3 Trevino, Blk. 7, Sur. No. 66 ..... Rigging up.
O. W. Killam's No. 6 A. Bustamente, 150 ft. to NE and SE lines, Blk. 8, Share 5, Comitas grant ..... T. D. 1,243 ft.; waiting on cmt.
Trevino Oil Corp.'s No. 8-A Trevino, 450 ft. to W, 150 ft. to N line, Blk. 26, Sur. No. 412 ..... Rigging up.

CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 40-C Cuellar, Sur. No. 278 ..... Derrick.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 40)

BEXAR COUNTY

John F. Camp.'s No. 1 Chevez, 12 miles S of San Antonio ..... Location.
Kaye & Uhl's No. 1 Rhode, C. Texada Sur. No. 133 ..... T. D. 665 ft.; shut down.
Long & Craig's No. 1 Sandemer ..... Location abnd.
J. M. Russell's No. 1 P. L. Price, 1,500 ft. to N line, 660 ft. W of tract in Angel Navarro Sur. ..... T. D. 1,076 ft.; drlg.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T. D. 702 ft.; shut down.
Russell & Moore's No. 3 Mills, Angel Navarro Sur. No. 5 ..... T. D. 940 ft.; shut down.
Ueckert et al's No. 1 Palfrey, 1,000 ft. S and W lines of farm ..... T. D. 1,803 ft.; coring Edwards.

CALDWELL COUNTY

Mills et al's No. 1 McMahon, 275 ft. SW line, 75 ft. SE line of tract, J. Pinchback Sur. ..... T. D. 2,320 ft.; drlg.
M. O. Rayor's No. 1 Dunlap, 150 ft. NW and NE lines of farm, Solomon Seal Sur. ..... T. D. 2,368 ft.; shut down for repairs.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. ..... T. D. 600 ft.; set 8-in. csg.

DEWITT COUNTY

Gibson & Sturm's No. 1 Clark, Dolores Alderete Sur. ..... Rigging up.

DUVAL COUNTY

Coffee et al's No. 1 Jose Garza, center Sur. 49 ..... T. D. 700 ft.; drlg.
Magnolia Pet. Co.'s No. 1 W. Benavides, 330 ft. to N and W lines of Sur. No. 172 ..... Location.
O'Byrne et al's No. 1 Weil, B.S.&F. Sur. No. 568 ..... T. D. 1,830 ft.; repairing boiler.
Gus Pape et al's No. 1 Juan Benavides, Blk. 38, Mesquite grant ..... T. D. 1,400 ft.; drlg.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 8,230 ft.; drlg.

FAYETTE COUNTY

Elam & Reynolds' No. 1 Florence, M. Muldoon Sur. No. 13 ..... T. D. 1,343 ft.; drlg.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 320 ft. E of C Sec. 133, Antone Hupsor ..... T. D. 3,716 ft.; set csg.; waiting on cmt.

GOLIAD COUNTY

Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. ..... T. D. 5,267 ft.; whipstock stuck.

GONZALES COUNTY

Linden Pet. Co.'s No. 1 Cowley, James Smith Sur. ..... T. D. 4,731 ft.; abnd.; dry.
Weal Oil Co.'s No. 1 Martin, 360 ft. SE line and SW line of tract, Thomas Moore Sur. ..... T. D. 4,820 ft.; abnd.; dry.

GUADALUPE COUNTY

McGarrity et al's No. 1 A. Wesch, Jr., 150 ft. to N and E lines of farm, H. M. Thompson Sur. ..... T. D. 475 ft.; drlg.
Schleyer, Atherton and Armstrong's No. 1 Ogletree, Robert Smith Sur. ..... T. D. 850 ft; drlg.

HAYS COUNTY

J. C. Jones et al's No. 1 Byder, John Ingram Sur. ..... T. D. 830 ft.; set csg.

JIM HOGG COUNTY

Magnolia Pet. Co.'s No. 1 Cuellar, Sur. No. 575 ..... T. D. 3,443 ft.; fishing.
Peterman & Minahan's No. 1 Palacios, Sur. No. 231 .... T. D. 1,360 ft.; drlg.

JIM WELLS COUNTY

Carsil Oil & Gas Co.'s No. 2 McGill, 900 ft. due N of No. 1 in D. Baldwin Sur. ..... Spudded in.
Gulf Prod. Co.'s No. 3 Shaeffer, center of J. T. White Sur. ..... T. D. 423 ft.; drlg.
Prairie Lee Prod. Co.'s No. 1 Oppenheimer ..... T. D. 1,000 ft.; shut down; waiting for heavier rig.
Smith Clark Co.'s No. 1 Cuero Cattle Co. ..... Location.
Stewart & Blair's (E. W. Ogden) No. 1 Farris ..... T. D. 2,123 ft.; standing.

KARNES COUNTY

Karnes County Development Co.'s No. 1 Hubbard, 3 miles W of Kennedy ..... T. D. 2,316 ft.; testing sand.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 1,010 ft.; shut down.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur., in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T. D. 1,165 ft.; shut down.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ..... T. D. 2,560 ft.; drlg.
Hicks et al's No. 1 Speck & Wiedner, Thomas Sur. No. 27, 2 miles S of Twin Sisters ..... Location.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia ..... T. D. 1,600 ft.; shut down.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,485 ft. S line ..... T. D. 600 ft.; moving in new rig.
Permian Oil Co.'s No. 1 Taylor, Sec. 18, G.B.&G. Sur. .... T. D. 1,711 ft.; fishing.

KERR COUNTY

Evans & Gant's No. 1 Selker-Mears, C.C.S.D.&R.G.N.G. Sur. No. 1,605 ..... T. D. 1,355 ft.; drlg.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 23 ..... Rigged up and shut down.
B. M. Hatfield's No. 1 Westland, Blk. 23, Westland Subd. to Kerrville ..... T. D. 426 ft.; abnd.
Evans & Gant's No. 2 Jeff Love, SW cor. Sec. 1,593 ..... Rigging up.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges ..... T. D. 2,512 ft.; shut down; hole full water.

LASALLE COUNTY

Fred W. Vales' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. ..... T. D. 40 ft.; standing.

LIVE OAK COUNTY

Burke-Greis Oil Co.'s No. 1 West Ranch, James Vaughan Sur. ..... Location.
Houston Oil Co.'s No. 1-A Parr, John McMullen grant.. T. D. 2,800 ft.; abnd.
Simpson Oil Co.'s No. 1 Wedding, 2 miles N of Three Rivers ..... T. D. 890 ft.; tested gas and salt water.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. ..... T. D. 2,145 ft.; standing.
Southern Exploration Co.'s No. 1 Ponder, B.S.&F. Sur., in eastern Live Oak ..... T. D. 4,139 ft.; tested salt water; drlg. deeper.
Sid Keoughan's No. 1 C. E. Terrell, 600 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ..... T. D. 2,840 ft.; shut down.

LEE COUNTY

Burt et al's No. 1 R. C. Saunders, J. Maxmillan Sur.... T. D. 3,297 ft.; rigging up to drill deeper.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T. D. 2,757 ft.; drlg.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur. ..... T. D. 1,715 ft.; fishing.

McLENNAN COUNTY

C. E. Groone et al's No. 1 League ..... T. D. 1,230 ft.; shut down.

McMULLEN COUNTY

Belt Pet., Inc.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... T. D. 28 ft.; standing.
Neuhaus et al's No. 1 J. O. Massey, Sur. No. 472 ..... T. D. 3,941 ft.; abnd
Whall, Scherer et al's No. 1 Shiner, Henry Brewer Sur.... T. D. 1,200 ft.; standing.

MEDINA COUNTY

J. H. Hickey's No. 1 Odon, H. Castro Sur. No. 175 ..... T. D. 820 ft.; shut down.
Donaldson Oil & Gas Co.'s No. 2 Adams ..... T. D. 130 ft.; standing.
C. H. Florian et al's No. 1 Henry Meyer ..... T. D. 200 ft.; abnd.
Caldwell et al's No. 1 L. W. Burrell ..... T. D. 518 ft.; abnd.
M. Eskridge et al's No. 1 Medina Valley Irrigation .... T. D. 1,550 ft.; abnd.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine ..... T. D. 2,789 ft.; abnd.
Sunflower Oil Co.'s No. 1 Mofield, J. Brothag Sur. No. 532 ..... T. D. 1,614 ft.; drlg.
Yancey Development Co.'s No. 1 Faseler Sur. No. 301 ... T. D. 1,175 ft.; drlg.

MILAM COUNTY

Dil-Tex Oil Corp.'s No. 1 Dilbeck, 450 ft. N and E lines of farm, Fernando Rodrigues Sur. ..... T. D. 748 ft.; drlg.
Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ..... T. D. 2,100 ft.; shut down.
Red Bank Oil Co.'s No. 1 Foster, A. G. Berry Sur. ..... Derrick.
McMasters and Pomeroy's No. 1 Pluger, J. J. Acosta Sur.. T. D. 1,136 ft.; shut down.
Kyser, Roberts & Dibble's No. 2 Ward ..... T. D. 3,060 ft.; abnd.
J. E. McKee et al's No. 1 Littleton, 150 ft. from N and 225 ft. from W line of lease, C. Chevalier Sur. ..... T. D. 510 ft.; shut down.
Peggie Brothers' No. 1 M. Reed ..... T. D. 780 ft.; shut down.

NUECES COUNTY

Mission Drilling Co.'s No. 1 Hunter ..... Building derrick.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 ..... T. D. 1,390 ft.; cleaning out cavings at 1,170 ft.
Gant-Kilgore and Evans' No. 1 A. D. Auld, C.C.S.D.& R.G.N.G. Sur. No. 23 ..... T. D. 2,780 ft.; drlg.

STARR COUNTY

B. B. Tips' No. 1 F. Dayno, Lot 1, Porcion No. 81 ..... T. D. 332 ft.; fishing.
Willard Oil & Gas Co.'s No. 2 Kelsey-Bass, Sec. 8, Blk. 3, Porcion 76 ..... T. D. 520 ft.; abnd.
Menyard et al's No. 1 Sealbury, 150 ft. from E line, 6,550 ft. from N line, Share 5, Porcion 75, Jurisdiction of Carmargo ..... T. D. 349 ft.; waiting on cement.

SAN PATRICIO COUNTY

Aransas Oil Co.'s No. 1 Welder, 15 miles N of White Point ..... T. D. 3,698 ft.; plugging back to sand at 3,663 ft. after testing salt water.
George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neill Sur., Abstract 211 ..... T. D. 4,020 ft.; shut down.
Saxet Oil Co.'s No. 1 Carroll, 8 miles N of Gregory .... Derrick.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denon Sur. ..T. D. 1,800 ft.; shut down.
F. W. Fuchs' No. 1 Ballersted, A. Alexander Sur. ..... Derrick.
Franklin et al's No. 1 Wilson, A. Alexander Sur. ..... Derrick.
Waldron et al's No. 1 Cook, D. H. Minor Sur., 8 miles SW of Austin ..... T. D. 645 ft.; drlg. shale.
Taylor Temple Oil Co.'s No. 1 W. Smith, L. Kimbro Sur.. T. D. 763 ft.; tested salt water.
Bohls & Wilson's No. 1 Norton, J. Cole Sur. ..... Derrick.

WEBB COUNTY

Cole Pet. Co.'s No. 4 Benavides, Sur. No. 1,601 ..... T. D. 1,250 ft.; drlg.

WILLIAMSON COUNTY

Fritz Fuchs' No. 1 L. W. Fuchs, Cartwright Sur. ..... T. D. 2,176 ft.; tested dry; shut down.
Wilburn et al's No. 1 Caroline Hurts, P. Coursey Sur. .... T. D. 1,327 ft.; shut down.
Wilson et al's No. 1 Walker ..... T. D. 2,260 ft.; shut down.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur. ..... Location.
Stover & Wren's No. 1 John Ruess, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ..... T. D. 1,100 ft.; shut down.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigged up and standing.
Benson Oil Co.'s No. 1 S. Vela, W cor. of Blk. 12, Sur. No. 259 ..... T. D. 1,330 ft.; drlg.
Bill Henry et al's No. 1 Gopher Trust estate, Borrego grant ..... T. D. 1,398 ft.; laying water line.
Lowe & Rogers' No. 2 P. Benavides, 170 ft. from S W., 340 ft. from NW line, Blk. 13, Sur. No. 613 ..... T. D. 1,200 ft.; drlg.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 2,075 ft.; drlg.
National Oil Co.'s No. 1 Zapata Trust Estate, 617 ft. NW line, 96 ft. NE line, Blk. 97, De Prom Subd., Porcion 6 ..... T. D. 690 ft.; drlg.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant ..... T. D. 1,148 ft.; standing.
Mackenzie & Talmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ..... T. D. 520 ft.; standing.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 30)

Southern Carbon Co.'s No. 2 Rosengraut & Ducomb, 1,980 ft. N, 660 ft. E, SW cor., Sec. 19-17-6.....Location.
Southern Carbon Co.'s No. 3 Rosengraut & Ducomb, 660 ft. S and E, NW cor., Sec. 30-17-6.....Location.
Southern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,525 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6..Location.
United Gas Public Service Corp.'s No. 3 Earle, NE cor., Sec. 25-17-5.....Tested dry 2,400 ft; arranging to test 2,430 ft.
United Gas Public Service Corp.'s No. 4 Earle, SE cor., Sec. 1-16-5e.....Tested dry 2,450 ft; arranging to deepen.

SABINE PARISH

Durham Oil Co.'s No. 1 Polly (was Davis et al's), NE cor. NE NE, Sec. 18-8-12 (was Stacy et al's).....S.D. 2,722 ft.
Diffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11.....S.D. 105 ft.
R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13.....Drlg. 1,944 ft.
Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11.....W.O.S.R; T.D. 2,620 ft.
Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11.....W.O.S.R. 2,800 ft.
Lide et al's No. 2 Ponder, 200 ft. S, 200 ft. E, NW cor. NE NW, Sec. 15-7-11.....S.D. 2,520 ft.
Jean Longoria's No. 1 Belton (no check), Sec. 31-9-13....S.D. 1,400 ft.
Packard O. & G. Co.'s No. 1 Smith (was Caddo-Sabine Synd.'s), Sec. 8-7-10.....S.D. 2,768 ft. for wtr.
H. W. Perritt's No. 4 Bowman-Hicks, SE cor. SE NE, Sec. 2-7-12.....Location.
H. W. Perritt's No. 1 Boring, NW cor. NW NW, Sec. 11-7-12.....Arranging to test 2,334 ft.
Sabine Royalties Co.'s No. 1 Skinner, SW NW, Sec. 5-8-11. Derrick.
A. H. Thames' No. 1 Edward est., 150 ft. NW SE cor. NE SE, Sec. 8-8-13.....Drlg. 900 ft.
John Woodley's No. 1 Sabine Lbr. Co., 400 ft. S, 330 ft. W, NE cor. SE, Sec. 12-8-12.....Cmtd. 6⅝-in. csg. 2,310 ft.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 29-11-12.....Fishing for D.S. 3,475 ft.

UNION PARISH

Fred A. Green's No. 1 U. S. Govt., 660 ft. N, 1,980 ft. W, SE cor. NE, Sec. 26-20-3e.....Drlg. 2,050 ft.
Nemours Corp.'s No. 1 Pace-Hamby, 660 ft. NE of SW cor., Sec. 35-22-3e.....Set 6-in. 2,102 ft.

VERNON PARISH

Weir & Smith's No. 1 Delta Land Co., 200 ft. S and W, NE cor., Sec. 14-2-11.....S.D. 4,500 ft.

WEBSTER PARISH

Coyle tr.'s No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11.....Derrick.
Red Hawk Oil Co.'s No. 1 Mathews, 330 ft. N, 330 ft. E, C, Sec. 11-23-9.....D.S. test failed 2,782-97 ft.

WEST CARROLL PARISH

United Gas Public Service Co.'s No. 1 Pioneer Cooperage, 663 ft. E, 3,954 ft. S, NW cor., Sec. 29-21-9.....Rigging up.

ARKANSAS
CHICOT COUNTY

R. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 21-23-3.....T.A. 2,925 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-3.....S.D; clearing titles 1,214 ft.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec 33-11-9.....S.D. 3,740 ft.

DALLAS COUNTY

E. C. Brewer's No. 1 W. E. Hillman, 330 ft. E, 40 ft. S, NW cor. SE NE, Sec. 20-10-13.....S.D; W.O. 2,846 ft.
J. H. James tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. NW NE, Sec. 11-9-15.....Tested 1 joint mud 2,492-2,505 ft.

GARLAND COUNTY
(Cable tools)

Givins et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-8-19.....1,300 ft. 5 3/16-in. in hole T.A. 3,756 ft.

GRANT COUNTY

Spann & McClung's No. 1 Sarah Page, 660 ft. W, 660 ft. S, NE cor. NW, Sec. 3-3-12.....Drlg. lime rock 936 ft.

HOT SPRINGS COUNTY

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16....S.D. for funds 220 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hattie, NW cor. NE, Sec. 1-20-6....T.A.
Smitherman & McDonald's No. 1 Reed, 200 ft. N, 200 ft. W, SE cor. NW NW, Sec. 16-15-22.....Setting 6⅝-in. packer 1,198 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-29.....Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26.....S.D; W.O. 3,570 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 2 Hallin, C, Sec. 17-16-25.....Abd; T.D. 405 ft.
J. W. Baxter's No. 3 Hallin, NE SW, Sec. 1-17-26.....Abd; T.D. 42 ft.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26 ..Abd. 2,813 ft.
East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26.....T.A. 910 ft.
E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 26-15-26.....T.A. 2,968 ft.
Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 23-15-26.....T.A. 93 ft.
Gusher Bend Oil Co.'s No. 1 Adams, 120 ft. S, 300 ft. W, NE cor. NW, Sec. 26-14-26.....S.D. 2,635 ft.
J. D. McRae's No. 1 Smith, 150 ft. N, 150 ft. W, SE cor., Sec. 28-15-26.....Derrick.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17.....Junked and abd. 2,907 ft.
Copenhaven et al's No. 1 Elliott, Sec. 11-15-17.....Bailed dry 2,210 ft; S.D; W.O.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14.....Drlg. lime rock 2,920 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-34.....Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 Baird, 760 ft. S, 660 ft. E, NW cor., Sec. 11-7-20.....Arranging to set 6⅝-in. csg. 3,403 ft.
Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21.....Drlg. soft sand 4,356 ft.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 26-4-26.....Fishing for bit; cor. T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29.....S.D; waiting on csg. 1,860 ft.

SEBASTIAN COUNTY

Ozark Natural Gas Co.'s No. 1 A. B. Bryant, C SE NE, Sec. 28-8-30.....3,250,000 ft. dry gas 1,557 ft.

UNION COUNTY

Chapman & Wilson's No. 1 A. H. Hadley, 330 ft. N, 330 ft. E, SW cor. NE SW, Sec. 3-18-13.....600 ft. fluid 30% S.W. in hole; T.A. 3,570 ft.
Wilson & Chapman's No. 1 N. Parker, 330 ft. S and W, NE cor. NE SE.....Set 10-in. 230 ft; T.D. 315 ft.
S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17.....Cored new hole to 2,140 ft; S.D; W.O.

VAN BUREN COUNTY

Glenn Kohle et al's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13.....T.A. 50 ft.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30.....Fishing for bit 1,780 ft.
H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29. S.D. 1,700 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 26-7-21.....S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Devore & Midfield's No. 1 Roy B. Cooper, 200 ft. S, 200 ft. W of NE cor. R. B. Cooper 115-ac. tr., Wm. Ward Sur.....S.D. 1,048 ft.
Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardidge 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur.....S.D. 2,125 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W of SW cor. J. H. Dyer Sur.....Derrick.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 555 ft. W, SE cor. T. M. Rice Sur.....Cored S.W. 2,699-2,718 ft; arranging to deepen.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr. in J. H. Murphy Sur.....S.D. 3,600 ft.

CASS COUNTY

E. K. Atkinson's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur.....Derrick.
R. G. Baker's No. 1 W. R. Caver, on W. R. Caver 75-ac. tr., John Lick Sur.....Derrick.
Davis & Pigg's No. 1 Roy Brian, SW cor. Roy Bryan 88-ac. tr., Albert H. Latimer Sur.....Drlg. 1,650 ft.
Sam B. Hunter's No. 1 Marshall Felker, 1,800 ft. E, 160 ft. N, SW cor. 66-ac. tr., L. Chambers Sur., landowner shows Jenkins on map.....Drlg. shale 3,700 ft.
Geo. McKamie's No. 1 R. E. Hall, 150 ft. N, 150 ft. W, SE cor. Hall's 117-ac. tr., H. Buckler Sur.....Began drlg. Apr. 21; drlg. 50 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur.....Coring shale 3,360 ft.
Olds & Smith's No. 1 Athens, 3,056 ft. W-E line, 856 ft. S-N line, J. C. Byers Sur.....S.D. 1,534 ft. (correct depth).
John C. Rogers' No. 1 L. E. Lanier, 578 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur.....S.D. 2,275 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur.....S.D. 955 ft.

HARRISON COUNTY

Corona Pet. Co.'s No. 1 A. J. Bohler, C, Bohler 140 ac. in SW cor. S. F. Sparks Sur.....Dry and abd. 3,160 ft.
Elmore & Bonner's No. 1 J. C. Lowery, in center of J. C. Lowery 81-ac. tr., W. W. O. Stanfield Sur.....Rigging up.
Geo. L. Pace et al's No. 1 T. G. and Eugene Barker, 710 ft. N of S line, 1,930 ft. W of E line, SE cor. 230-ac. tr., Victor Pedraso Sur.....Rig up.
O. H. Parkening's No. 1 T. J. Taylor, C, Blk. 32, W. H. Payne Sur.....Rigging up.
O. H. Parkening's No. 2 T. J. Taylor, C, J. C. Hawley Sur.....Derrick.
W. G. Ray Drlg. Co.'s No. 1 F. C. Hall, D. Davis Sur. ..Drlg. 3,630 ft.
Rowe-Nichols' No. 1 Pitts, E. A. Merchant Sur.....Location.
Ryan Consolidated Pet. Corp.'s No. 1 Dr. H. H. Key, 1,500 varas N of SE line, 500 varas E of SW line, of E. Carroll Sur.....Derrick pattern.
Seigel Bros. and Kelinson's No. 1 Taylor (no check), F. O'Neil Sur.....Derrick.

MARION COUNTY

Eden Oil Co.'s No. 1 J. M. DeWare est., 150 ft. S, 1,507 ft. E, NW cor., S. R., Hazelwood Sur.....Drlg. sandy shale 3,005 ft.
Gist, Claunch & Dodson's No. 1 Miller, 1,470 ft. E line, 725 ft. N line, SW cor. H. Fulgran H.R. Sur.....Rigging up.
Geo. Hindman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,565 ft. E most easterly W line, Alexander Albright Sur.....S.D. repairs 400 ft.
Hindeman & Rhondo's No. 1 McGaughey, 1,547 ft. W, most northerly SW cor., 1,638 ft. N most northerly S line, W. J. Willis Sur.....S.D. 2,300 ft.
P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur.....S.D. 1,884 ft.
Sinclair O. & G. Co.'s No. 1 D. R. Coulter, W. Russell Sur.....Dry and abd. 3,910 ft.

PANOLA COUNTY

Everette Drlg. Co.'s No. 1 E. L. McDaniels, 200 ft. S, 200 ft. W, NE cor. McDaniels' 116 ac., Alanson Barr Sur.....S.D. 350 ft.
Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur. ..Location.
The Texas Co.'s No. 2 G. W. Brumble, 400 ft. S, 200 ft. E, NW cor., Jno. Womack Sur.....Drlg. lime 3,380 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. ....S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .....S.D. 2,280 ft.

SHELBY COUNTY

I. M. Bradley's No. 1 Ashberry (no check), G. W. Mitchell Sur.....Rig up.
E. L. Chapman's No. 1 Pickering Lbr. Co., C. E. Henry (headright).....Drlg. broken shale and chalk 2,665 ft.
Chappell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ..S.D. 3,111 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur.....Rigging up.
T. A. Martin's No. 1 J. B. Bush, S 8° E, 2,000 ft. from NW cor. J. B. Bush's 77-ac. tr., thence E at right angles to said line 200 ft., Alfred Lindsey Sur. ....Moving in rig.
Henry Maulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur.....Drlg. 1,000 ft.
Sloan Prospecting Co.'s No. 1 Sanford, approximately 300 ft. N and 200 ft. E, SW cor. B. Sanford 49-ac. tr. in M. M. Vann Sur.....Rigging up.
Sloan Prospecting Co.'s No. 1 Windham, H. English H.R.S.....Drlg. Wilcox 1,410 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 36)

Yount Lee Oil Co.'s No. 19 Chambers, south flank, Wm. Bloodgood Sur., 10 ft. N Sun Oil Co.'s No. 8...Coring sand showing oil 3,751 ft.
Yount Lee Oil Co.'s No. 3 Winfree, W. D. Smith Sur., 100 ft. out of NE cor. of tract.....Rig.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 1 Martha Remmert.....Location.

HUMBLE—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 2 H.E.&W.T., Adams Sur., 250 ft. N along railroad tract from No. 1 and 25 ft. W from center of said tract.....Spudded.
Rio Bravo Oil Co.'s No. 1 Westheimer, John Brown Jones One-Third League, 800 ft. from E line and 100 ft. from S line of Blk. 1, in Lot 48, Westheimer Subd.....Location.
Trapshooter Oil Co.'s No. 2 Rosenbaum.....Standing 4,067 ft.

A NEW ERA IN WATER PUMPING ECONOMY

Pomona Turbine Pumps are designed and manufactured in keeping with the trend toward greater economy and a cleaner water supply for refineries, cooling systems, and for general industrial purposes. Water produced by this method is purer and pumping costs are brought to an irreducible minimum. Pomona Turbine Pumps are consistent in first cost, consistent in performance and consistent in efficiency. These are some of the reasons why Pomona is selling more Turbine Pumps than any other manufacturer in the country. 15 to 5000 g.p.m. from wells as small as 4" diameter.

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POMONA TURBINE PUMPS . .

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Oil Burners and Gas Burners for every industrial purpose: Steam atomizing Burners, Motor-driven Rotary Burners, Low Pressure Air Burners, Gas Burners, Combination Gas and Oil Burners, Fuel Oil Pump Sets, Fuel Oil Strainers. Engineering advice, design and supervision of complete oil or gas burning systems for every industrial purpose.

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RESULTS

from advertisements carried in the Classified Wants Section are very satisfactory. Letters received from advertisers who use this section prove that this form of advertising pays.

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The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING
TULSA, OKLA.

Sun Oil Co.'s No. 16 Bender, Adams Sur., Bender South Addition, 110 ft. N of N line of H.E.&W.T. 150-ft. right of way and 75 ft. E of center line of right of way ..... Rig.

Sun Oil Co.'s No. 22 Bender, Adams Sur., 200 ft. NE at right angles from midway point on line between Nos. 3 and 20 ..... Drlg. shale 4,072 ft.

Sun Oil Co.'s No. 23 Bender, Adams Sur., 300 ft. NW of No. 21 in line with Nos. 21 and 15 ..... Drlg. shale 4,458 ft.

Sun Oil Co.'s No. 24 Bender, W. B. Adams Sur., 24 ft. N of Rio Bravo's No. 3 H.E.&W.T. on Sun's east line ..... Location.

Sun Oil Co.'s No. 1 O'Connor, Adams Sur., 75 ft. from S line and 75 ft. from E line of 1-ac. tract by S.P. depot ..... Derrick.

Sun Oil Co.'s No. 1 Beck, west flank ..... Abandoned in shale 5,516 ft.

PIERCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 14-A Settegast (workover) ..... Total depth 5,008 ft.; sidetracked 2,610 ft. and drlg. gumbo and lime 3,371 ft.

Rio Bravo Oil Co.'s No. 21-A Settegast, J. Kopman Sur., 400 ft. S and 200 ft. N of NE cor. "A" lease.. Rig.

Smith et al's No. 1 Bender fee, B.B.B.&C. Sur. No. 1,028, 173 ft. from E line and 14 ft. from N line of Lot 40, Jones Subd. ..... Sand showing oil 4,467 ft.; cmtd. 6⅝-in. csg. 4,159 ft.; drilled plug and set 1 jt. 4½-in. screen 4,469 ft.; standing.

Tilton & Perot's No. 1 Gulf fee, B.B.B.&C. Sur. No. 1,028, 230 ft. from E line and 26 ft. from S line, Lot 26, Jones Subd. ..... Set 1 joint 4½-in. screen 3,807 ft.; comp. flowing 15 bbls. hourly on half-inch choke.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 52 Davis M. Young Sur. (workover).. Tested salt water 4,233 ft.; perforating csg. to test 3,500-ft. sand.

NASH—BRAZORIA COUNTY

Rycade & Abercrombie's No. 5 Wisdom (D.D.) ..... Sand and shale showing oil 4,201-32 ft.; to test.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 13 Mayes, B.B.B.&C. Sur. No. 4, 75 ft. W and 700 ft. S of NE cor. of survey ..... Drlg. gumbo 2,435 ft.

BOLING—WHARTON COUNTY

The Texas Company's No. 12 Taylor (workover), S. F. Austin Sur., 50 ft. SW of center of NE line ..... T. D. 4,031 ft.; pulling screen to deepen.

SPINDLETOP—JEFFERSON COUNTY

Gulf Production Co.'s No. 7 Mann (D.D.), John Douthit Sur. ..... Milling out of csg. 3,623 ft. to sidetrack.

Yount Lee Oil Co.'s No. 12 Fee (D.D.), John Douthit Sur. ..... Comp. flowing 16 bbls. net oil, 10 per cent B.S. and water, 4,183 ft.

Yount Lee Oil Co.'s No. 146 McFaddin, P. Humphreys Sur., 2,772 ft. from W line and 2,528 ft. from N line of tract ..... Abd. in heaving shale 6,207 ft

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 20 Cade ..... Rig standing.

Yount Lee Oil Co.'s No. 21 Cade, Fitzsimmons Sur., 150 ft. W of No. 17 ..... Drlg. 400 ft.

NORTH DAYTON—LIBERTY COUNTY

M. L. Gray's No. 1 Schindler, H.E.&W.T. Sur. No. 120, 100 ft. E and 250 ft. N of SW cor. of survey ..... Derrick.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 29 Moore, John Frazier Sur., 600 ft. N of 26 in line with Nos. 23 and 26 ..... Drlg. gumbo 826 ft.

DAMON MOUND—BRAZORIA COUNTY

D. C. Wellock's No. 1 Hamon, John P. Mills Sur., 1,115 ft. NE line and 60 ft. W line Blk. 1 ..... Derrick.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 5 Janner, J. F. Perry Sur., 1,200 ft. from SW line and 1,100 ft. from SE line ..... Drlg. shale 1,043 ft.

Sun Oil Co.'s No. 5 Clay, J. F. Perry Sur., 200 ft. from SW line and 1,850 ft. from SE line of Clay tract .... Set 43 ft. 4½-in. screen 1,746 ft., comp. flowing 850 bbls., 430 lbs pressure on half-inch choke.

Sun Oil Co.'s No. 3 W. F. Schlottman, J. F. Perry Sur., 300 ft. from NE line and 1,522 ft. from SE line of tract ..... Drlg. hard lime 1,729 ft.

ALLEN—BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen (workover), J. G. McNeel Sur., 1,211 ft. from W line and 2,569 ft. from N line of survey ..... Total depth 4,999 ft.; cutting and pulling csg.

Mills Bennett Prod. Co.'s No. 1 Poole, T. & W. Alley League, 1,390 ft. from E line and 100 ft. from S line (workover) ..... Heaving shale 4,902 ft.; sidetracked and drlg. shale 4,167 ft

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds' No. 7 Davis, David Kokernot Sur., 100 ft. S of No. 4 ..... Drlg. shale 3,320 ft.

Cranfill-Reynolds Oil Co.'s No. 1-C Kirby fee ..... Drill stem stuck 6,154 ft.; sidetracking 4,182 ft.

Cranfill-Reynolds Oil Co.'s No. 2 Moore's Bluff (workover) ..... No report.

BLUE RIDGE—FORT BEND COUNTY

Doney & Means' No. 1 Blakely, E. Drew Sur., 430 ft. W and 75 ft. N of SE cor., Lot 8, Blk. D ..... Sandy shale showing oil 3,730 ft.; cmtd. 6⅝-in. csg. 3,630 ft.

Telschow, Cady et al's No. 5 Blakely, E. Drew Sur., 90 ft. E, 150 ft. S of NW cor. of E half, Lot 4, Blk. F.... Drlg. gumbo 580 ft.

HANKAMER—LIBERTY COUNTY

Gulf Production Co.'s No. 13 Boyt, H.&T.C. Sur. No. 22, 500 ft. N of No. 1 in line with Nos. 6 and 11 ..... Drlg. shale and lime 1,956 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 114-A Cotton..... Bailing 507 ft.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTIES

Humble Oil & Ref. Co.'s No. 2 Breeding, northwest flank.. Abnd. in heaving shale 6,771 ft.

Humble Oil & Ref. Co.'s No. 2 Sergeant, east flank ..... Reaming 5,931 ft.

Texas Gulf Sulphur Co.'s No. 1 R. H. Munger, J. McFaddin Sur., 100 ft. from N line and 100 ft. from E line 27-ac. tract..... **Sulphur test.**

Texas Gulf Sulphur Co.'s No. 4 Carter, B. M. Spinks Sur., 100 ft. from N line and 100 ft. from E line of 40-ac. tract ..... **Sulphur test.**

Texas Gulf Sulphur Co.'s No. 1 Cowan, B. M. Spinks Sur., 200 ft. N and 1,150 ft. W of SE cor. 154-ac. tract ..... **Sulphur test.**

Texas Gulf Sulphur Co.'s No. 1 A. Z. Gardner, B. M. Spinks Sur., 100 ft. W and 100 ft. S of NE cor. 60-ac. tract ..... **Sulphur test.**

Texas Gulf Sulphur Co.'s No. 1 V. R. McManus, B. M. Spinks Sur., 200 ft. S and 100 ft. W of NE cor. 125-ac. tract ..... **Sulphur test.**

Texas Gulf Sulphur Co.'s No. 2 V. R. McManus, B. M. Spinks Sur., 1,500 ft. W and 100 ft. S NE cor. 125-ac. tract ..... **Sulphur test.**

Texas Gulf Sulphur Co.'s No. 3 V. R. McManus, B. M. Spinks Sur., 100 ft. S and 100 ft E NW cor. 125-ac. tract ..... **Sulphur test.**

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 1 Doughty ..... Set 22 ft. screen 6,403 ft.; comp. flowing 50 bbls. gasoline, 2,200 pounds pressure, on two quarter-inch chokes.

Houston Oil Co.'s No. 5 Wilson Heard (workover) ..... Reset screen 3,686 ft.; put on gas lift and blowing small amt. of fluid, 90 per cent water.

The rendition of true service is a dominant motive in modern industry. The Petroleum Industry's acceptance of this principle is emphasized, not only in pleasantly convenient distribution of socially indispensable products, but by its sincere regard for the welfare of those engaged in the industry, as well. No commodity can be of sufficient value nor sold at so low a price, as to justify the needless sacrifice of life or limb, in its production. On this thot is predicated the Industry's sincere endeavor to MAKE PETROLEUM THE SAFEST INDUSTRY IN THE WORLD.

SAFETY SECTION
MID-CONTINENT OIL & GAS
ASSOCIATION

"Accidents can MID-CONTINENT OIL & GAS ASSOCIATION be prevented"

(This space contributed by a member company)

Houston Oil Co.'s No. 3 Rose Lambert ..... Coring sand 6,397 ft.
Houston Oil Co.'s No. 14 Pratt-Hewitt-Rooke ..... Shale 6,120 ft.; fishing.
Houston Oil Co.'s No. 1 O'Brien (D.D.), Blk. 5 ..... Comp. flowing 50 bbls. gasoline, 2,200 pounds pressure on two quarter-inch chokes.

Houston Oil Co.'s No. 5 Mrs. M. H. Ryals, Refugio Town Tract, 150 ft. from N line of tract and 527 ft. east of No. 1 ..... Spudded.
Houston Oil Co.'s No. 6 Pratt-Hewitt-Rooke (D.D.), Thos. Mullen Sur., 1,150 ft. N and 200 ft. W of SE cor. of tract ..... Rig up to deepen 3,708 ft.
Mission Drilling Co.'s No. 2 Moss-Powers, C, Blk. 109, townsite ..... Drlg. sand, shale and lime 4,110 ft.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor .... Total depth 6,470 ft.; plugged to 6,431 ft.; tested salt water milling out 6,356 ft. to sidetrack.

Moody-Seagraves Prod. Co.'s No. 8 O'Connor, Refugio Town Tract, 350 ft. east of No. 1 and 150 ft. from S line of lease ..... Cmtd. 12½-in. csg. 1,271 ft.
Moody-Seagraves Prod. Co.'s No. 2-A J. F. B. Heard ..... Rig standing.
Moody-Seagraves Prod. Co.'s No. 1 Shelly ..... Tested salt water 6,456 ft.; plugging back.

Ed Price's No. 3 Mission River, Refugio Town tract, 750 ft. up river from No. 2 on S bank of river ..... Shut down 350 ft.
Saxet Oil Co.'s No. 3 Cable (D.D.) C, Blk. 19, Town Commons ..... Set 1 jt. screen 3,700 ft.; to pump.
United Prod. Corp.'s No. 1-A Fox, L. Brown Sur., 750 ft. W along S line from SE cor. of lease and 1,000 ft. N of said line ..... Sand showing oil 5,614 ft.
United Prod. Corp.'s No. 3 Fox (workover) ..... Cored sand showing oil 6,439-42 ft.
United Prod. Corp.'s No. 9 O'Brien, 150 ft. S of S line and 175 ft. E of extended W line of Moody-Seagraves' O'Brien "B" lease ..... Drlg. shale, lime and shell 5,560 ft.

United Prod. Corp.'s No. 6 Power, S Blk. 83, Refugio Townsite ..... Drlg. shale and lime 5,492 ft.
United Prod. Corp.'s (Union) No. 2-A Rose Lambert, 175 ft. W and 200 ft. N of SE cor., Blk. 1, of town tract ..... Drlg. shale and lime 6,303 ft.
United Production Corp.'s No. 6 A. W. J. Heard, Refugio town tract, 1,353.6 ft. from W line and 387 ft. from S line of tract ..... Drlg. sticky shale 3,383 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Martha Moss ..... Oil sand 6,518-6,529 ft.; cmtd. 7-in. csg. 6,505 ft.; drld. plug and set 1 joint 4½-in. screen; comp. flowing 2,500 bbls. pipe line oil, 1,175 pounds pressure on ¾-in. choke; flow cut to 1,300 bbls. on ¼-in. choke.

Vacuum Oil Co.'s No. 31 Miller (D.D.), 360 ft. from N line and 900 ft. from W line of SW NE, Sec. 8-10s-9w ..... Drlg. sandy shale 4,642 ft.
Vacuum Oil Co.'s No. 7 State, 319 ft. N and 260 ft. W SE cor. NE Sec. 8-10s-9w ..... Drlg. sticky shale 6,511 ft.
Yount Lee Oil Co.'s No. 2 Miller, 125 ft. N and 120 ft. W SE cor. NE NW, Sec. 8-10s-9w ..... Drlg. gumbo 1,102 ft.

EDGERLY—CALCASIEU PARISH

Rex Pet. Co.'s No. 2 Prairie Narroni, Sec. 21-9s-11w, 365 ft. from S line and 50 ft. from E line of lease ..... Sand showing oil 4,087 ft.; cmtd. 5-in. csg. 4,050 ft.

Strange Oil Co.'s No. 1 Reed (D.D.), Sec. 28-9s-11w, 60 ft. W and 100 ft. S of NE cor., Lot 3, Koonce Subd. ..... Deepened from 3,679 to 3,687 ft.; set 35 ft. of 3-in. screen; pumped dry; temporarily abnd.

HACKBERRY—CAMERON PARISH

Federal Petroleum Co.'s No. 2 Hebert, 660 ft. S and 660 ft. W of NE cor. NW NW, Sec. 33-12s-10w ..... Drlg. water sand 4,469 ft.
R. E. Seiss' No. 3 J. M. Vincent ..... Gumbo 1,830 ft.; shut down.
The Texas Company's No. 2 State ..... Derrick.
Yount Lee Oil Co.'s No. 34 State ..... Location.
Yount Lee Oil Co.'s No. 36 State ..... Location.
Yount Lee Oil Co.'s No. 37 State ..... Location.
Yount Lee Oil Co.'s No. 38 State ..... Location.
Yount Lee Oil Co.'s No. 39 State ..... Location.

VINTON—CALCASIEU PARISH

Gulf Prod. Co.'s No. 6 Gardner, 350 ft. N and 554 ft. W of SW cor. SE NE Sec. 33-10s12w ..... Set screen 3,586 ft.; comp. flowing 700 bbls. pipe line oil.

Vinton Pet. Co.'s No. 11 Matilda Gray (20 acres), 608 ft. from S line and 195 ft. from E line of tract in Sec. 33-10s-12w ..... Drlg. rock 2,990 ft.
Vinton Pet. Co.'s (Lucky Ten) No. 1 Lizzo ..... Tested salt water 3,285 ft.; pulling liner and screen.

BAYOU BOUILLON—ST. MARTIN PARISH

Humble Oil & Ref. Co.'s No. 1 Woodyard Lake ..... Abandoned in shale 6,471 ft.
Humble Oil & Ref. Co.'s No. 4 State ..... Drlg. sandy shale 5,041 ft.

SWEET LAKE—CAMERON PARISH

Magnolia Pet. Co.'s No. 2 Sweet Lake, Sec. 5-13s-7w ..... No report.
Pure Oil Co.'s No. 10 Yount Lee ..... Sand showing oil 7,366-87 ft.; reaming to set csg.

PORT BARRE—ST. LANDRY PARISH

The Texas Company's No. 9 Botney Bay ..... Pulling screen to deepen 3,399 ft.

STARKS—CALCASIEU PARISH

Gulf Refining Co.'s No. 27 Lutcher-Moore, Sec. 19-9s-12w. Drlg. sand and shale 759 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 762 fee (workover) ..... Drlg. salt 7,939 ft.; top of salt 5,864 ft.
Union Sulphur Co.'s No. 765 fee, Sec. 29-9s-10w..... Drlg. gumbo 2,480 ft.
Union Sulphur Co.'s No. 766 fee, Sec. 29-9s-10w..... Tested salt water 4,338 ft.; pulling screen.

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 2 State, Sec. 18-12s-12w, 1,345 ft. from E line and 1,565 ft. from N line ..... Salt 4,207-6,460 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Drlg. shale 6,662 ft.
O'Hara et al's No. 1 Schrader ..... Shut down 3,650 ft.
Parmerson & Cafferkey et al's No. 1 W. M. Schlecte, John Fitzgibbons Sur., 1,850 ft. from SE line and 3,100 ft. from NE line of Sur. ..... Drlg. sand 957 ft.

BRAZORIA COUNTY

Faust et al's No. 5 Faust, Blk. B, Sec. 3, H.T.&W. Sur.... Drlg. shale 6,474 ft.
Freeport Sulphur Co.'s No. 2,091 fee, Bryan Heights .... Heaving shale 5,260 ft.; S. D.
Layne et al's No. 1-A Wisdom, Damon Mound ..... Set 3 jts. 4½-in. screen 2,708 ft.; comp. flowing 472 bbls. pipe line oil first 12 hrs., estimated pressure 400 lbs. on ¾-in. choke; gravity 30.6 degrees.

Amerada Pet. Corp.'s (Rycade) No. 2 Seaburn, Stratton Ridge ..... Heaving shale 7,624 ft.
The Texas Company's No. 1 Belcher, Manvel, 167 ft. SE of NW line and 223 ft. NE of SW line, Lot 18, Blk. A, Suburban Gardens Subd. ..... Location.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur... Drlg. sand and shale 1,865 ft.

BURLESON COUNTY

Mid-South Oil Co.'s No. 1 Duckworth ..... Shut down 2,646 ft.
Reynolds Oil Co.'s No. 1 Harris, 500 ft. from W line and 400 ft. from N line of J. M. McKean Sur. ..... Shut down 400 ft.

HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 5 Minnetex, Mykawa, 150 ft. from S line and 300 ft. from W line, Lot 261, Wm. Lovett Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 6 Minnetex, Mykawa, Wm. Lovett Sur., C of Lot 254 ..... Drlg. gumbo and shale 1,615 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Smith, J. Timmins Sur., Will Mousin and Driscoll Sub. ..... Drlg. sand 4,441 ft.

COLORADO COUNTY

United North & South Oil Co.'s No. 1 H. P. Lockwood, 3,100 ft. S line and 2,000 ft. W line J. R. Johnson Sur. ..... Spudded.

FORT BEND COUNTY

H. R. Cullen's No. 1 Lockwood, John Rabb Sur., 475 varas from W line of E half of survey and 1,245 ft. from N line ..... Rig.

JACKSON COUNTY

Chicago-Gulf Co.'s No. 1 Rogers (workover) ..... T. D. 3,662 ft.; drlg. sidetracked hole 2,107 ft.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234 ..... Drlg. shale and lime 7,082 ft.
Keith et al's No. 1 Reed-Hankamer ..... Drlg. sand and shale 4,654 ft.
The Texas Company's No. 4 Pipkin, Big Hill ..... Coring shale 5,726 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; shut down.
Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 ..... Gumbo 560 ft.; shut down.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherd's Mott ..... Set 47 ft. 4½-in. screen 5,221 ft.; tested salt water; preparing to deepen.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove ..... Total depth 6,295 ft.; sidetracking in shale 5,785 ft.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, south of Conroe ..... Shut down 678 ft.; gumbo.
Price & Wilhite's No. 2 Juerges ..... Drlg. shale 3,775 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... Formerly temporarily abnd. 4,603 ft.; sidetracked hole 1,200 ft.; drlg. 1,826 ft.
Crew Oil Co.'s No. 1 Mansfield ..... Shut down 1,460 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... Drlg. shale 2,802 ft.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 16, Bonnie View Ranch Subd. ..... Shut down in gumbo 4,014 ft.
Humble Oil & Ref. Co.'s No. 1 O'Connor, John Keating Sur. ..... Location.

SAN JACINTO COUNTY

E. P. Edward et al's No. 1 Bennett, northwest of Cold Springs ..... Spudded and shut down.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,255 ft.; cmtd. 6-in. csg. 1,218 ft.

Allied Pet. Co.'s (Texas Southern Pet. Co.'s) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... Drlg. hard shale and lime 4,875 ft.
Lew Wents' No. 1 Long Bell, 800 varas E and 100 varas N from SW cor. James Seals Sur. ..... Drlg. sand and shale 3,350 ft.

VICTORIA COUNTY

Newton et al's No. 1 West ..... Shut down 1,550 ft.
Simpson-Fell and Westheimer et al's No. 1 Levi, 2,200 ft. from SW line and 2,000 ft. from NW line of S,A.&M.G. Sur. No. 4 ..... Spudded.
T. B. Slick estate's No. 1 McFaddin, J. Vairan Sur., 17,700 ft. NE along SE line from S cor. of survey and thence 5,050 ft. NW at right angles ..... Spudded.

WASHINGTON COUNTY

Joe Baker et al's No. 1 Kramer, Brenham, 600 ft. S and 300 ft. W NE cor. 92 acres ..... Spudded.
Penn-Tex Oil Co.'s No. 2 Kamas Brenham, S. M. Williams Sur. ..... Shut down in shale 2,800 ft.
Vegus Oil Co.'s No. 1 P. Graves, S. Clampet Sur. ..... Drlg. rock 256 ft.
H. H. Givens' No. 3 Hudgins, I. B. Phillips Sur., 19 ft. W of No. 2 ..... Gumbo and lime 1,438 ft.; reaming to bottom.

WHARTON COUNTY

Poole & Chappell's No. 1 Poole, A. J. Fry Sur., Sec. 16, 8 ft. at right angles from center of SW line of sec... Rig.

SOUTH LOUISIANA

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 875 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Set 6⅝-in. csg. with 172 ft. 6⅝-in. screen on bottom 6,568 ft.; drilled plug and bailed dry; standing.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Shut down 3,258 ft.
Dr. Thomas et al's No. 1 John Hewitt ..... Location.
Vacuum Oil Co.'s No. 1 Wait (D.D.), 225 ft. out of SE cor. Sec. 12-9s-7w ..... Reset 1 jt. 7-in. screen in sand 5,001-08 ft.; tested slight show oil, gas and water; standing.

CAMERON PARISH

Vacuum Oil Co.'s No. 2 Cameron Meadows, 3,120 ft. S and 1,900 ft. W from NE cor. Sec. 21-14s-9w (500 ft. S No. 1) ..... Drlg. hard sand 3,167 ft.
The Texas Company's No. 7 State, Calcasieu Lake ..... Location.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 11 Lake Peigneur, Jefferson Island ..... Drlg. lime rock 875 ft.

IBERVILLE PARISH

Standard Oil Co.'s No. 1 Gay, Bayou Choctou ..... Fishing core barrel 4,130 ft.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 9 Wilbert, Bayou Des Glaises, 700 ft. E and 760 ft. N of SW cor. SE SW Sec. 78-8s-8e.. Drlg. rock 1,722 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Abandoned in shale 6,007 ft.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue... Cap rock showing oil and sulphur 3,693-3,748 ft.; set csg.

JEFFERSON DAVIS PARISH

A. V. Peters' No. 1 Smith Subd., Welsh, 1,050 ft. N and 180 ft. E SW cor. Sec. 23-9s-5w ..... Drlg. shale 1,183 ft.

LA FOURCHE PARISH

The Texas Company's No. 2 L.L.&E. Co. (D.D.), 4,396 ft. S and 705 ft. E of the NW cor., Sec. 26-21s-22e ... Oil sand 3,598-3,623 ft.; cmtd. 4½-in. csg. 3,595 ft.; drilled plug and set screen.

PLAQUEMINES PARISH

Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille, Sec. 14-20s-26e ..... Reaming 5,861 ft.

TERREBONNE PARISH

The Texas Company's No. 6 State, Caillou Island ..... Drlg. hard sandy lime 4,120 ft.
The Texas Company's No. 1 La.L.&E., Bay St. Elaine ... Hard sand and lime 4,751 ft.; drill stem stuck.
The Texas Company's No. 4 State, Dog Lake ..... Drlg. gumbo 898 ft.
The Texas Company's No. 5 State, Four Isle ..... Coring soft lime rock 593 ft.
The Texas Company's No. 3 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 4 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 6 State, Lake Barre ..... Rig.
The Texas Company's No. 10 State, Lake Barre..... Location.
The Texas Company's No. 11 State, Lake Barre..... Location.
The Texas Company's No. 12 State, Lake Barre..... Location.
The Texas Company's No. 13 State, Lake Barre..... Capping piling.
The Texas Company's No. 14 State, Lake Barre..... Location.

VERMILLION PARISH

Pure Oil Co.'s No. 1 Alliance Land, Sec. 34-11s-1w, 2,600 ft. N and 300 ft. E of SW cor. section ..... Rigging up.

VERNON PARISH

Smith & Wier's No. 1 Delta, NE Sec. 14-2n-11w ..... Drlg. shale and lime 4,455 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 2 Como Plantation, Sec. 51-1s-4w. Drlg. shale 1,081 ft.

SOUTHWEST TEXAS FIELDS

(Continued from Page 40)

and got salt water and is plugging back before setting casing.

One of the next tests along the Balcones fault to either start something or go out of the picture entirely is the Turner, Whorton & Anderson's No. 1 Harris in Bastrop County which shut down to clear titles after getting a number of good gas shows and has now resumed drilling. Latest reports placed it at 2,361 feet and it had not yet topped the chalk which may be a little low.

SOUTHWEST TEXAS PRODUCTION

Agua Dulce	46
Bexar County	331
Branyon	22
Bruner	12,526
Buchanan	101
Chapman	3,908
Dale	298
Darst Creek	20,614
Goliad County	30
Kingsville	115
Larremore	22
Luling	8,687
Lytton Springs	729
Manford	135
McMullen County	20
Medina County	22
Minerva	404
Mirando district*	13,261
Pettus district	7,423
Saxet	396
Somerset	1,336
Thrall	35
White Point	41
Yoast	...
Total Southwest Texas	70,492
Week ended April 18	71,146
Decrease	654

*Includes Charco-Redondo, Jennings and Mirando Valley of Zapata County; Albercas, Aviator, Caroline-Texas, Mid-O-Juelos, Schott and Wolcott, Webb County; Alworth, Henne-Winch-Farias and Randado, Jim Hogg County; Cole, Driscoll, Kohler, Schoolfield-O'Byrne and S.R.C.-Vacuum of Duval County; Mount Lucas, Live Oak County.

GULF COAST FIELDS

(Continued from Page 36)

south of Yount Lee Oil Co.'s No. 1 Miller, discovery well. Vacuum Oil Co.'s No. 9 Bordages, east offset to the discovery, was completed several weeks ago, while the latter company's No. 7 State, west offset, was nearing the producing horizon, drilling at 6,511 feet in sticky shale.

This area, which gives promise of yielding Lockport's most consistent and prolific production, is a considerable distance to the north of the other new pool opened west of the main field about six months ago. In the latter four wells have been completed from two horizons, one at 4,800 feet and the other at 5,600 feet. These wells have not proved as favorable.

High Island Sale

Following purchase as announced in The Oil and Gas Journal, April 23 issue, of Gulf Production Co.'s holdings at High Island, Galveston County, Marrs McLean, Beaumont independent operator, the past week sold his newly acquired holdings to Yount Lee Oil Co. of Beaumont. With the exception of 100 acres held by Sun Oil Co., Yount Lee Oil Co. has acquired complete control of that dome.

Final details of the two-way trade, which involved all of Gulf Production Co.'s holdings of 300 acres in fee and 300 acres of leases with six producing wells making around 400 bbls. daily, also have been made known. In the first transaction Marrs McLean acquired these holdings on his own account, paying $150,000 in cash and $300,000 to be paid out of one-eighth of the first oil produced with additional 6½ per cent perpetual overriding royalty.

In the second deal, Marrs McLean three days later sold this to Yount Lee Oil Co., which company paid $225,000 in cash and $300,000 to be paid out of one-eighth of the first oil produced with an additional 6 per cent overriding royalty over the 6½ per cent to be paid the Gulf. In this, Mr. McLean's net return on the trade amounts to $75,000 in cash with a 6 per cent overriding royalty. Yount Lee Oil Co.'s obligations consist of one-eighth fee royalty, an eighth (12½ per cent) overriding royalty and $300,000 out of an additional eighth.

Yount Lee Oil Co. last month purchased Marrs McLean's original holdings at High Island, consisting of 1,400 acres and four producing wells, and equipment, paying $200,000 in actual cash, $400,000 in notes over a period of a year, $2,000,000 to be paid out of the first oil produced, and an additional eighth overriding royalty.

New Refugio Wildcat

Humble Oil & Refining Co. has made location in the extreme eastern edge of Refugio County for what promises to be an interesting wildcat. This test, No. 1 O'Connor, will be in the John Keating Survey, just north of the town of Inari. This is just across the Victoria County line and approximately 5 miles west of The Texas Company's wildcat gas well, No. 2 McFaddin, C. M. Hoyd Survey, at present shut in. The latter blew in several months ago from a sand around 1,950 feet while drilling at 2,025 feet. These tests are in a line of development which extends through the Refugio Field and down through a series of new fields in the lower Gulf Coast region. The Texas Company's gas well, in turn, is some 3½ miles to the west of United Production Corp.'s two gas wells, drilled by Lion Oil & Refining Co. late in 1930, and completed in a 3,700-foot horizon.

Vinton Producer

Gulf Refining Co. added another producer to the Vinton, La., north extension pool in its No. 6 Gardner, flowing 700 bbls. of oil daily from sand at 3,586 feet.

New Sand at Sweet Lake

Pure Oil Co.'s No. 10 Yount Lee Oil Co., Sweet Lake, Cameron Parish, Louisiana, has drilled into another new deep sand showing oil topped at 7,366 feet. It has drilled to 7,387 feet without going out of the sand but is reaming to set casing to test. This test was completed early in March in sand at 6,805-30 feet flowing 214 bbls. net oil, 25 per cent water, but failed to hold up. Even at that depth it was the deepest test in the field, which is a field of only deep sands so far. This well lacks only about 100 feet of equalling the deepest producer ever completed on the Gulf Coast, that being by Yount Lee Oil Co. southeast of Jennings.

CANADIAN FIELDS

(Continued from Page 38)

which has several producing wells on this acreage, but has done no drilling since last year.

Central Turner Valley

In the Central Turner Valley area, Richfield Petroleums' No. 2, LSD 12-13, Section 13-20-3w5, is reported drilling nearly 100 feet in the lime at 4,825 feet, with some increase in the wet gas flow. This test is in the north central section and fairly close to the Spooner wells.

To the south, Dome Oils' No. 2, LSD 16, Section 36-19-3w5, is swabbing while deepening to the lime. The test is around 5,200 feet and is carrying 8-inch pipe behind the tools. The light crude is seeping from the Dalhousie sands.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, has been reconditioned and is reported once more on steady production. The crew was equipped with gas masks, in spite of which the workers periodically collapsed and had to receive first aid. Special equipment was made to handle the refractory casing. Impressions taken of the 5-inch casing indicated that a long sliver of casing from an upper string had wedged between the 5-inch and 8-inch. Casing above the 5-inch was swedged out and a new string run. It was found that every string from 15½-inch to 8-inch had been forced inward. Apparently water seped from the river level, collected about the casing and through the action of the expanding gas was frozen and forced in the pipe, shutting off the gas flow. With new pipe all in place, the reganhead was fitted and anchor rods secured; some 2,300 sacks of cement were used to fill the space about the casing and shut out seepage water.

McLeod Oil Co. held its annual meeting at Calgary recently when the following directors were elected: President, R. J. Hutchings; vice president, W. E. McLeod; secretary, J. G. Edgar; directors, W. S. Herron, George Cloakey, E. H. McLeod, F. F. Reeve.

In North Turner Valley, United Oils' No. 4, LSD 2, Section 24-20-3w5, is drilling in the top of the Dalhousie sand at 5,340 feet and carrying 8-inch casing. Crude production may be taken from this horizon by a packer and 6-inch hole carried down into the lime. The test previously had a small light crude production from the Dalhousie at 5,385 feet but was cemented back and redrilled, tools having been lost in the original hole.

Imperial Drilling

Among the Imperial tests in South Turner Valley, Merland Oil Co.'s No. 1, Section 27-18-2w5, is drilling 54 feet in the lime at 5,043 feet with encouraging indications.

The tenth annual report of Royalite Oil Co. shows the company has 25 wells, of which Nos. 24 and 25 were completed this year as producers; 22 are listed as producing wells, with 1 abandoned, 1 shut down and 1 an intake well drilled for a gas storage test. In 1930 five wells were brought into production and one deepened. In addition, Royalite Oil Co. is carrying out in South Turner Valley drilling obligations to Mayland Oil Co. and Southern Lowery Oils, Ltd., in both of which companies it holds controlling interests. Its tests for Mayland Oil Co. include three producers and two wells drilling, while for Southern Lowery it has completed one producer and is drilling two other tests.

Dalhousie Operations

Operations of the Dalhousie Oil Co., subsidiary of Imperial Oil, Ltd., for 1930 show a total of seven wells, of which No. 7 was completed as a producer in 1930. Three others are producers and three were abandoned, two under previous ownership.

Waite Valley Test Abandoned

On the Waite Valley structure, west of Turner Valley, Calgary Development & Producing Corp.'s No. 1, LSD 10, Section 21-19-3w5, has been abandoned at 5,010 feet. This test was drilled by Imperial Oil, Ltd., and after considerable drilling difficulties got the lime at 3,834 feet. Several small shows of gas and oil were met in the lime, but the production test proved the well to be noncommercial. Calgary Development's No. 1 was the last active test on the main Waite Valley structure, a number of others, including two deep tests, having been shut down when faults were encountered.

Hudson's Bay Tests

In the Keho Lake area, southern Alberta, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, is drilling out cement at 3,415 feet, 43 feet off the old bottom.

In the Castor area, Hudson's Bay's No. 1 Painstearth, LSD 5, Section 27-39-15w4, is drilling at 4,030 feet with about 3,000 feet of salt water in the hole. The water was struck in the lime below 3,628 feet, and is the first report of salt water being found in this formation in Alberta. Efforts will be made to shut off the flow and continue drilling.

Ribstone Field

In the Ribstone Field, eastern Alberta, Algonquin's No. 2 has cellar dug. Ribstone Oils, Ltd., has installed pumping plant and erected two 1,000-bbl. storage tanks at Rivercourse, the point of loading on the C.P.R. The shipping project includes installation of dehydrating plant, laying of a pipe line from the field to the railroad, reconditioning of wells for steady production and installation of steam plants at Rivercourse and in the field. Production will be utilized by the railroad for locomotive fuel.

British Columbia

In the Kelowna district, British Columbia, Okanagan Oil & Gas Co.'s No. 1, Section 2-26-Osoyoos, is reported drilling 10-inch hole below 1,400 feet.

Manitoba Operations

In the Manitou district, southwestern Manitoba, Commonwealth Petroleums, Ltd., of Calgary, has let contract for its No. 2 test in LSD 2, Section 26-2-9-WPM. Lee & Newman, who drilled Commonwealth's No. 1, will handle the contract. Commonwealth's No. 1 wildcat was carried to 1,200 feet largely to corroborate information obtained in a test drilled by an English syndicate in 1913. Commonwealth's No. 1 proved the existence of a gas structure and encountered flows at several different horizons and the log checked closely with that of the English syndicate test. No. 2 is a mile north of No. 1 in a better position on the structure and if satisfactory production is secured at this point, systematic development and marketing of the gas will be undertaken.

Ontario Drilling

In the Dawn Field, Lambton County, Ontario, Union Natural Gas Co.'s No. 58, SW, Lot 11, Concession 1, Dawn Township, will spud in within a few days. Union's No. 59 has been located in NW, Lot 24, Concession 2, Dawn Township. In Mosa Township, Middlesex County, Southern Ontario Gas Co.'s No. 8, SE, Lot 14, Concession 3, is starting to rig up.

In Kent County, F. H. Stover & Son of Chatham are reported moving in two strings to drill for the Black Bear Syndicate of Detroit on acreage north of Wallaceburg. Black Bear's No. 1 will probably be drilled on the north branch of the Sydenham at the junction of Black and Bear Creeks.

Union's No. 195, Lot 8, Concession 5, Rainham Township, Haldimand County, is rigging up.

Calgary Companies

Shareholders of the Foothills Oil & Gas Co. of Calgary, a subsidiary of Imperial Oil, Ltd., held their annual meeting at Calgary when the following officers were re-elected: President, Alexander Hannah; secretary, O. H. Might; directors, E. J. Chambers, J. J. Saucier, Cluny McDonnell.

GAS MEASUREMENT SHORT COURSE IS A BIG SUCCESS

(Continued from Page 39)

courses of a somewhat like nature are given at other universities in this country they are not in conflict with this course at Norman for it alone deals with natural gas measurement problems.

To give some idea of the immense amount of gas consumed in this country last year it was stated that if it had all been gathered in one container at 6-ounce pressure this tank would have been 1 mile square and 13 miles in height.

Companies Contribute Equipment

The course is conducted by the professors of the College of Engineering, University of Oklahoma, which is headed by Dean J. H. Felgar, who stated in his address that this engineering college was established in 1906 and includes courses in mechanical, petroleum, civil, electrical and mining engineering, the petroleum engineering course having been established in 1924 and the mining course being made part of the college work since that date.

By centralizing this work at the Oklahoma University for the Mid-Continent area it eliminates the necessity of duplication of equipment at other colleges.

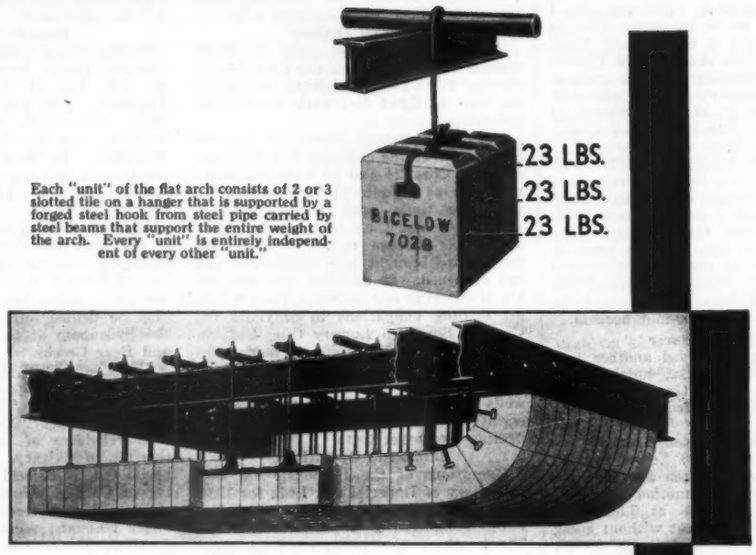
Assisting in this work is the Corporation Commission of Oklahoma, Oklahoma Utilities Association, Natural Gas Department of the American Gas Association and Natural Gasoline Association of America.

At this session the following gas equipment manufacturers were represented: The Bristol Co., the Chaplin-Fulton Manufacturing Co., B. V. Emery & Co., The Foxboro Co., Metric Metal Works of the American Meter Co., McEwen Regulator Co., McGaughy Integrator Co., Pittsburgh Equitable Meter Co., Refinery Supply Co., Robinson Orifice Fittings, Sprague Meter Co., Taylor Instrument Co., Westcott & Greis, Inc., and Fisher Governor Co.

The annual banquet was held on Wednesday evening and the course closed Thursday afternoon.

DEATH OF J. E. LAWRENCE

ELDRED, Pa., Apr. 25.—John Eaton Lawrence, 75 years old, died in an Olean hospital Tuesday, following a paralytic stroke. The funeral was held today. Mr. Lawrence had been engaged in the oil business in this district for many years.



Each "unit" of the flat arch consists of 2 or 3 slotted tile on a hanger that is supported by a forged steel hook from steel pipe carried by steel beams that support the entire weight of the arch. Every "unit" is entirely independent of every other "unit."

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The time usually necessary to cool down furnaces of cracking units can be greatly reduced by removing several "units" from the Bigelow Arch to give the hot gases this natural and rapid avenue of escape. Since each Bigelow Arch "unit" is independent of every other "unit," lifting and replacing these "units" (from *outside* the furnace) is a simple matter that requires only a moment's time.

. . . . assures longer life

There is no cumulative loading of the refractory in either the flat or sloping arch, and each refractory "unit" is free to expand and contract without imposing stress on itself or adjacent "units," thereby eliminating the principal cause of spalling. Nose construction and curtain walls are supported independently of the arch as shown above.

The Bigelow Unit-Suspended Wall has these same characteristics

. . . . requires less maintenance

Repairs are seldom necessary but they are cheaply and quickly made from outside the furnace without waiting for it to cool down. Any "unit" can be replaced without disturbing adjacent tile; this minimizes the amount of refractory used.

. . . . permits most efficient furnace design

Because of its "unit-suspended" construction, the Bigelow Arch will fit any desired arch contour without sacrificing its pendulum feature and without a complicated supporting structure. It is simply necessary to vary the length of the steel hooks that individually support the refractory "units."

BIGELOW-LIPTAK

A SUSPENDED WALL AND ARCH FOR EVERY FURNACE

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Sales Offices in Principal Cities

Canadian Licensees: Riley Engineering & Supply Co., Ltd., Toronto 10, Canada » » » Main European Office: Liptak Furnace Arches, Ltd., 38 Victoria Street, London, S. W. 1, England

OKLAHOMA FIELDS

(Continued from Page 27)

Section 17-13-16, has been completed for 5 bbls. in sand 2,077-2,113 feet. No. 4 Jackson, NW cor. SW NW, Section 17-13-16, has been completed for 750,000 feet of gas in sand 1,468-78 feet.

Oklahoma County

American Oil & Refining Co.'s No. 1 Washington, SW cor. NW SW, Section 35-12-3w, Oklahoma City Pool, is rigging up. H. F. Wilcox Oil & Gas Co. and Diffie's No. 1 Terminal, SW cor. NE SW NW, Section 3-11-3w, is moving in. T. B. Slick estate is building the rig for No. 2 Burroughs, NW cor. NE NW, Section 10-11-3w. Indian Territory Illuminating Oil Co. has the cellar dug for No. 1 Stevens, Block 21, Fruitland Addition, NE cor. NW SW SE, Section 15-11-3w. Phillips Petroleum Co. and Shell Petroleum Corp.'s No. 1 Egermier, CWL SW SW SW, Section 23-11-3w, is a cellar. Empire Oil & Refining Co.'s No. 1 Gustine, SW cor. NE, Section 1-11-3w, topped Wilcox sand at 6,490 feet, drilled to 6,561 feet and made 289 bbls. in four hours. Champlin Oil & Refining Co.'s No. 2 Seal, NW cor. SW SW, Section 2-11-3w, has been completed for 272 bbls. in four hours at 6,327 feet after plugging back from 6,504 feet. Mid-Texas Oil Co.'s No. 1 Aungust, SE cor. NE NE NW, Section 3-11-3w, topped Wilcox sand at 6,312 feet, drilled to 6,455 feet and made 17,101 bbls. in eight hours. Phillips Petroleum Co.'s No. 1 Forrester, CNL SE SE NE, Section 3-11-3w, topped Wilcox sand at 6,266 feet, drilled to 6,377 feet and made 7,100 bbls. in four hours. Phillips Petroleum Co.'s No. 1 Othenin, NE cor. SW NE NE, Section 3-11-3w, has been completed for 16,844 bbls. in 7½ hours on 4-inch choke, producing from Wilcox sand 6,272-6,441 feet, total depth 6,446 feet. Indian Territory Illuminating Oil Co. and others' No. 5 Pasadena Heights, NE cor. SW, Section 14-11-3w, has been completed for 156 bbls. in 4½ hours in sand topped at 6,505 feet, total depth 6,548 feet.

Okfuskee County

Wheeler and others made location for No. 1 Deer, NW cor. NE, Section 26-10-8. McMan & Seekell's No. 1 S. Johnson, NW cor. SW SW, Section 28-12-10, is dry and abandoned at 3,180 feet. Foster Development Co.'s No. 1 Holmes, SW cor. SE, Section 13-11-10, is a dry hole at 3,859 feet.

Okmulgee County

Murta & Sherry's No. 1 H. Fulsom, NE cor. SW, Section 21-16-11, is a location.

Pittsburg County

Red Bank Oil Co.'s No. 1-A Campbell, C NW, Section 6-6-14, is dry and abandoned at 758 feet.

Pontotoc County

Smith & Lee's No. 4 Wade, SE cor. NE, Section 3-4-7, has been abandoned at 650 feet. Clark & Cowden's No. 2 Brown, SE cor. NE, Section 12-4-7, made 2,000,000 feet of gas in sand 1,933-44 feet, total depth 1,963 feet.

Pottawatomie County

Twin State Oil Co. has the rig on the ground for No. 5 Archer, SW cor. NE SE, Section 22-6-3, West Asher Pool. J. A. Hull's No. 2 Townsend, NW cor. SE SE, Section 22-6-3, flowed 745 bbls. from sand 3,530-47 feet after shooting with four and seven quarts. Payne and others' No. 6 Bullock, NE cor. SW NE, Section 22-6-3, has been completed for 1,123 bbls. in sand 3,587-3,600 feet.

Seminole County

The Prairie Oil & Gas Co. is erecting the rig for No. 2 Hassman, SW cor. SE NE, Section 3-8-5, Carr City Pool. Magnolia Petroleum Co. made location for No. 4 Wood, NW cor. NE SW, Section 29-6-6, Konawa Pool. The Prairie Oil & Gas Co. and T. B. Slick estate's No. 4 Hyde, NE cor. SW NW, Section 2-8-5, Carr City Pool, made 700 bbls. from Wilcox sand 4,160-73 feet. Mid-Kansas Oil & Gas Co. and Ramsey's No. 5 Davis, NW cor. SE NW, Section 30-8-8, Wewoka Townsite Pool, flowed 925 bbls. from Cromwell sand 3,050-3,136 feet. Magnolia Petroleum Co.'s No. 3 Wood, SW cor. NE SW, Section 29-6-6, swabbed and flowed 803 bbls. from sands 2,744-82 feet and 2,805-14 feet. Neal & Milton's No. 1 Thomas, NW cor. NE SW, Section 9-6-7, an old dry hole, was cleaned out and tested at 865-95 feet and then plugged. Magnolia Petroleum Co.'s No. 2 Reed, NE cor. NW NE, Section 26-5-7, West Asher Pool, has been completed for 30,000,000 feet of gas in sand 2,580-2,650 feet.

Stephens County

Taylor & Overmyer's No. 1 Skelton, NE cor. SW SW, Section 23-1s-7w, is dry and abandoned at 1,582 feet.

Texas County

Western Production Co. made location for No. 1 Gabel Brothers, C NE, Section 24-4-13ecm. Argus Production Co.'s No. 1 Kenny, C SW, Section 36-5-14ecm, has been completed for 5,500,000 feet of gas in sand 2,790-2,810 feet after plugging back from 2,856 feet.

Wagoner County

J. P. Flannigan has a machine on the location for No. 1-A Showalter, CWL SE SW, Section 20-16-19. William La Pierre's No. 1 M. Gregory, NE cor. SE NW, Section 19-17-17, made 6,340,680 feet of gas from sand 1,232-36 feet.

International Stacey Corp. Grows Out of Ideco-Stacey Merger

COLUMBUS, Ohio, Apr. 25.—Stockholders of the International Derrick & Equipment Co. and the Stacey Engineering Co. have approved their merger into the International-Stacey Corp., with headquarters at Columbus. Carmi A. Thompson, president of Stacey Engineering Co., will be chairman of the new company, and Harry M. Runkle, president of International Derrick, will be president and general manager.

Mr. Thompson is a director of the Central United Bank of Cleveland and chairman of the Midland Steamship Co. He was formerly treasurer of the United States. Mr. Runkle is a director of the American Rolling Mill Co. and president of the Eastern Hocking Coal Co.

E. D. Johnston, former president of the P. H. & F. M. Roots Co., a Stacey company, will continue in the capacity of member of the board of directors of the Stacey Engineering Co.

George W. Ansted, who for many years has been a member of the board of directors of the Connersville Blower Co., Inc., a Stacey company, has been elected to the board of directors of the Stacey Engineering Co.

J. S. Tatman, president and general manager of the Connersville Blower Co., Inc., and the P. H. & F. M. Roots Co., will continue in active charge of the Connersville, Ohio, companies.

International Derrick makes oil well, electric, railroad and other equipment. The Stacey company manufactures gas holders, blowers, meters and similar equipment.

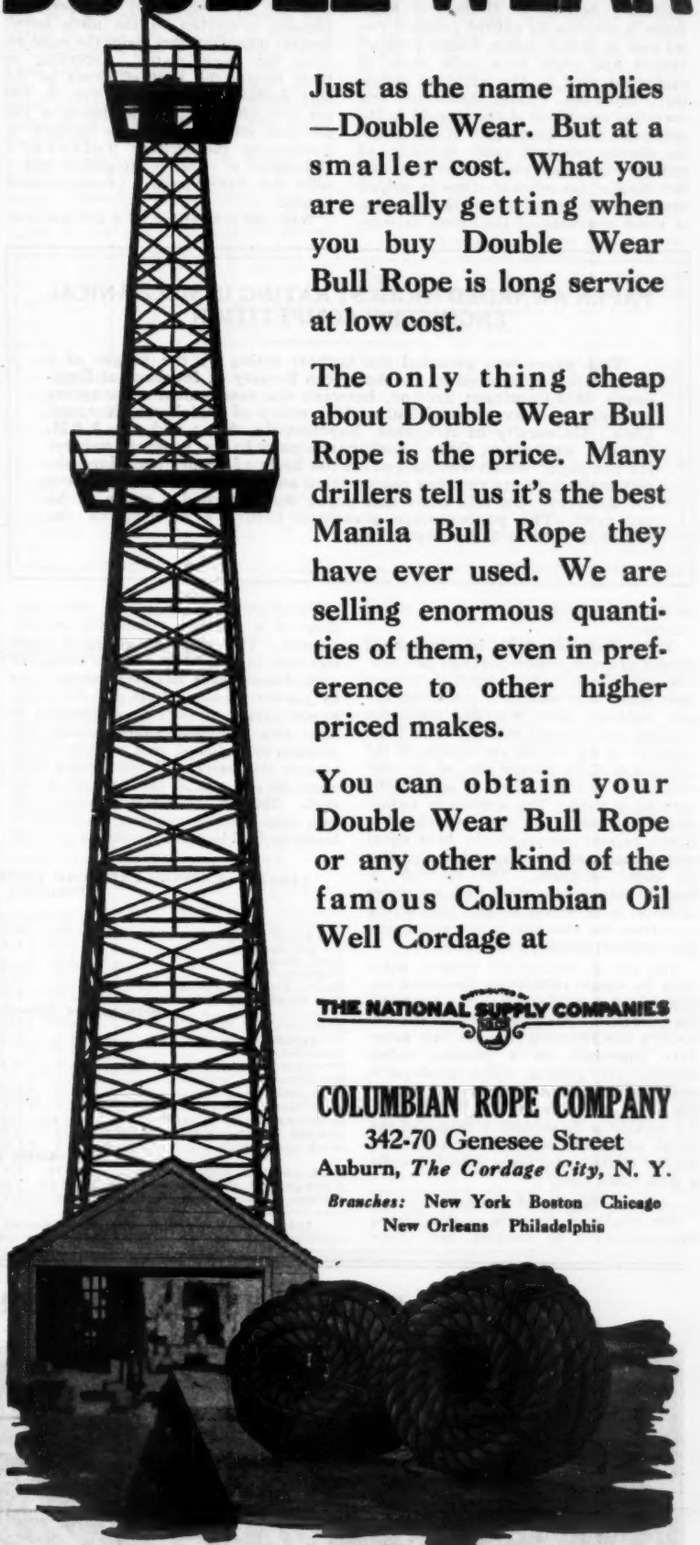
PRODUCTION IN PERU AND COLOMBIA FIELD

CHATHAM, Ontario, Apr. 25.—An official statement just issued by International Petroleum Co. of Toronto covers the company's operations in South America for February and March, 1931.

In the Peruvian fields, four producing wells were completed in February with average initial production of 130 bbls. Total production for February was 465,953 bbls., and average daily production in March was 30,080 bbls., increased to offset the partial shut down in February. In January and February, 11 wells were completed with average initial production of 369 bbls., and total crude production for the two months of 1,244,393 bbls.

In Colombia four new producers were completed in February with average initial production of 480 bbls. The total crude production for February was 1,565,425 bbls., and the average daily production for March was 57,254 bbls. In the first two months of 1931, 10 producing wells were completed in Colombia, with average initial production of 503 bbls.; and the total crude production for the two months was 3,223,126 bbls.

DOUBLE WEAR



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BULL ROPE

STUDY OF STRESSES AND STRAINS IN WELDED UNFIRED PRESSURE VESSELS

By C. H. Keplinger
Student, University of Tulsa

The comparatively recent action of the American Society of Mechanical Engineers in revising its unfired pressure vessel code to include fusion welded pressure vessels will apply to a wide range of equipment used in the petroleum industry. Table No. 1 gives thicknesses and operating conditions of vessels used in the industry. It is the purpose of this paper to discuss strength and ductility of welded joints for pressure vessels and the effect of the relief of stress in welded vessels. Stress relief is used in this paper to mean annealing of the vessel on completion to remove strains set up during welding.

This discussion will be limited to welded pressure vessels made by the electric arc process. Other types of welding that might have well been considered are gas welding, force welding, resistance welding and thermit welding. The basic principle of all electric arc welding is the utilization of the intense heat of the electric arc to fuse two pieces of metal, thus forming a weld. The welding is accomplished by connecting one terminal of a direct current source to the base metal and the other terminal to either a carbon or metal electrode. The electrode is brought into close contact with the pieces of metal to be welded so that the current arcs from the electrode to the metal supply the heat necessary for fusion.

The art of electric arc welding dates back to about 1875 when Benardoz experimented with the carbon arc for welding purposes. The technic of electric arc welding has advanced from its first primitive procedure to a process, called shielded arc welding, which produces a weld high in tensile strength and possessing great ductility. The object of welding technic is to produce a fusion of the metal which has physical characteristics similar to the metal being united, usually a mild rolled steel.

Results of Tests

The results of the tests on thin plates, three-sixteenths to one-half inch, fuses together by shielded arc welding, proved that the weld was equal or superior in physical properties to the plate metal. Several manufacturers claim the same results for thick plates. According to these results the joint efficiency of the butt double-V shielded arc weld is 100 per cent efficient. By producing a 100 per cent efficient joint, the problem of distributing the stresses uniformly throughout a vessel is simplified, and a safer and less expensive pressure vessel results.

With the realization of a 100 per cent efficient joint, the design of other portions of a pressure vessel will be considered. The value of elliptical heads specified in A.S.M.E. code as compared with dished heads has been brought out by mathematical analysis and by strain measurements of tests to destruction of large thin and thick-walled vessels. The common type dished head of same thickness as the vessel wall will develop only about 60 per cent of the strength of the shell. Making the heads thicker—common shop practice requires thickness of heads to be 1½ times thickness of shell—increases strength, but also increases concentrated stresses in the short radius portion of the knuckle. These added to the increased stresses caused by the stiffening action where the thick section joins the thinner shell section, causes rupture in the head at stresses much lower than in the shell. A modified dished head, with an unusually long knuckle radius and thickness 1½ times shell thickness, will develop about 90 per cent of the strength of the shell for thin vessels and only about 80 per cent of the strength of the shell for thick-walled vessels.

Elliptical Heads

Elliptical heads with shape of head as one-half of an ellipsoid, having a major axis equal to the diameter of the vessel and a minor axis equal to one-half of this diameter, will develop the full strength of the vessel wall without any increase in thickness of the head.

The openings and nozzles of a pressure vessel must be reinforced. The width of the reinforcing rings must be determined by destruction tests of vessels. The problem is to reinforce the openings so that its strength is equal to the strength of the vessel; care must be taken to avoid localized stiffening at the openings.

Regardless of the accuracy taken in the design of a pressure vessel, any benefits that accrue may be offset by failing to take care of relief of stresses. In a great many cases vessels must be stress relieved. This is particularly true of thick-walled vessels, and applies in cases to thin wall vessels and is dependent largely on individual shop procedure and facilities. Vessels are stress relieved by annealing to remove the strains set up during welding. Ordinarily a temperature of about 1,200° F. is used, which, although not a true normalizing temperature, is enough to relieve the strains resulting from contraction due to welding without producing any deformation. The temperature is increased slowly to about 1,200° F. and held there for a time—usually in the proportion of one hour per inch of shell thickness—and then allowed to cool slowly in still air. During cooling the atmosphere inside the oven should be as free of oxygen as possible to prevent oxidation of the metal in the vessel which occurs at temperatures above 1,000° F. Vessels that have been stress relieved have a factor of safety which is known within close limits, but if they have not, high internal stresses may remain and result in the vessel having an unknown—and maybe dangerously low—factor of safety when in operation. Vessels should be stress relieved upon completion and before testing.

PAPER AWARDED HIGHEST RATING IN MECHANICAL ENGINEERS' COMPETITION

This paper was awarded the highest rating by the judges of a competition sponsored by the American Society of Mechanical Engineers, Mid-Continent Section, between the mechanical engineering students of University of Tulsa; University of Oklahoma, Norman, Okla.; University of Arkansas, Fayetteville, Ark.; and the A.&M. College, Stillwater, Okla. Each participant had a separate subject for his paper which was judged on the basis of 70 per cent for subject matter, 20 per cent for composition and English, and 10 per cent for delivery. On this basis this paper was awarded a grade of 86 per cent. The papers were presented before a meeting of the A.S.M.E. held in Tulsa, April 23.

TABLE 1—UNFIRED PRESSURE VESSELS USED IN PETROLEUM INDUSTRY*

Name of vessel—	Thickness, inches Min.	Max.	Avg.	Operating conditions Temp., °F. Min.	Max.	Avg.	Pres., lbs. sq. in. Min.	Max.	Avg.
Production Department									
Oil-gas separators	3/16	1 1/4	3/8	—20	148	60	Vac.	1,000	50
Sand traps	5/8	1	3/4	—20	80	60	30	500	200
Cushion heads	7/8	1 1/2	1	—20	80	60	30	1,000	200
Small, flathead storage tanks	1/4	3/8	1/4	Atmospheric			Vac.	10	2
Gas scrubbers	3/16	7/8	3/8	—20	80	60	Vac.	400	15
Refining and Natural Gasoline Department									
Fractionating towers	1/4	3 1/2	1/2	50	850	500	5mm.	600	10
Stripping towers	1/4	3/4	1/2	250	600	500			5
Absorbers	1/4	2	1/2	30	100	90	30	400	40
Treating towers	1/4	3/4	1/2	30	400	90	0	25	10
Scrubbers and separators	1/4	2	1/2	Atmospheric			Vac.	400	30
Accumulators	1/4	1 1/2	1/2	Atmospheric			0	400	150
Stabilizing towers	1/2	1 1/4	3/4	50	500	300	60	400	150
Rundown pressure tanks	12 ga.	1/2	3/16	Atmospheric			0	50	0
Storage tanks—natural gasoline	1/4	3/8	5/16	Atmospheric			20	50	30
Heat exchangers	3/8	1 1/2	1/2	60	900	300	5mm.	600	20
Marketing Department									
Bulk gasoline storage tanks	3/16	1/4	3/16	Atmospheric			0	10	2
Underground gasoline stg. tanks	14 ga.	7 ga.	14 ga.	Atmospheric			0	0	0
Butane mixing and storage tanks	1/4	3/4	3/8	Atmospheric			0	80	50

*The data in the table have been selected from bulletins of the various companies manufacturing the equipment, and checked by men engaged in the use of such equipment.

WELDING ASSOCIATION HOLDS ANNUAL MEET

(Continued from Page 27)

Products Co., Dallas, Tex., addressed the association.

Both afternoons on Wednesday and Thursday were given to demonstrations of welding and cutting processes by the various companies which had supplies on exhibition.

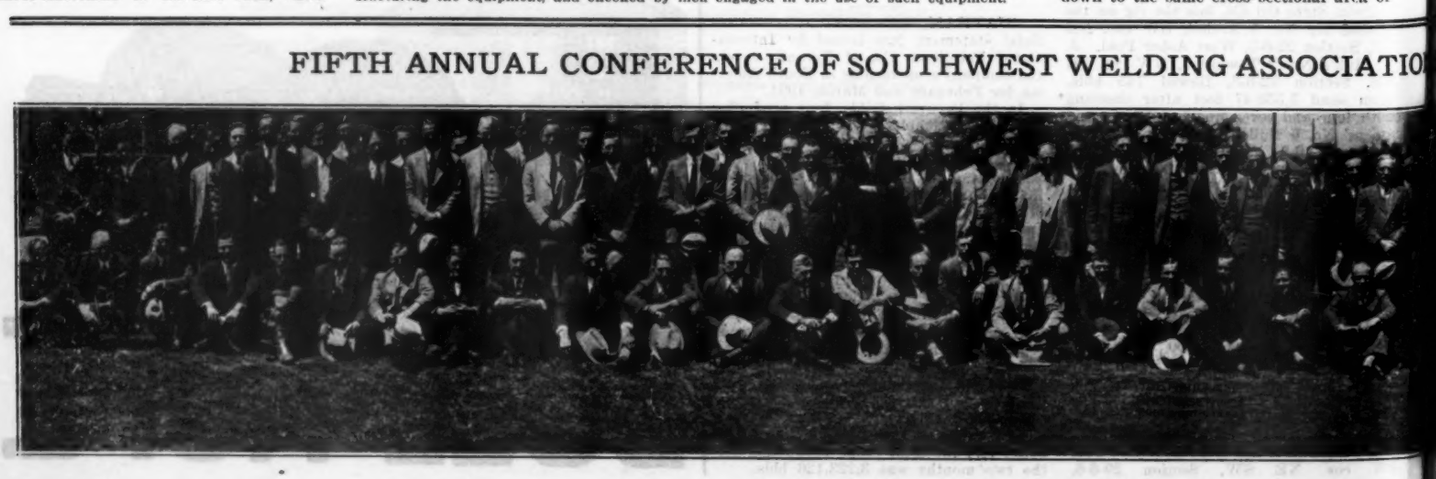
Mr. Rickel's Paper

Mr. Rickel's paper in part follows:

"In the past two years a new method of arc welding has been placed on the market. This is commonly called the shielded arc electrode process. It may be used both as a manual arc process or as an automatic arc welding process. Due to the use of such a shielded arc, welds can now be made, having a tensile strength exceeding that of mill-rolled steel. The ductility of the shielded arc weld is also greater; in fact is fully on a par with mill-rolled steel, and in many cases even exceeds that ductility.

"The molten weld metal as it is being deposited through an arc has an affinity for oxygen and nitrogen. Since the arc stream is maintained in an atmosphere composed chiefly of oxygen and nitrogen, oxidation proceeds at a very high rate during the passage of the weld metal from the electrode to the work. In this way oxides and nitrides are formed in the weld metal and it is the presence of these oxides and nitrides in the weld metal which impairs its strength, ductility and resistance to corrosion. However, if the molten weld metal can be protected from contact with atmospheric oxygen and nitrogen during the process of deposition, the weld so produced will be much freer of oxide than nitride. Photomicrographs of the shielded arc weld will show the finer crystalline structure of the weld that indicates strength and ductility and integration of weld metal and the parent metal in the zone of fusion. The strength and ductility of welds are dependent primarily on the purity of the weld metal and the nature of metallic structure. Hundreds of tests have proved that welds under stress fail at the point where the oxide and nitride contact content is greatest. Welds produced in a shielded arc will give a tensile strength of a minimum of 60,000 pounds per square inch to a maximum of 85,000 pounds per square inch; averaging a minimum of 20,000 pounds per square inch greater than ordinary roll steel. The thickness of the material welded has no effect on the tensile strength of welds made by the shielded arc. The shielded arc weld is of sufficient strength to be machined down to the same cross-sectional area of

FIFTH ANNUAL CONFERENCE OF SOUTHWEST WELDING ASSOCIATIO



the original piece to be welded and will give greater strength than the original material.

Ductility

Next to the tensile strength of a weld and equally important, if not more so, is the factor of ductility. A weld of good tensile strength may not be ductile. However, welds produced in a shielded arc possess both characteristics to a very high degree. It is very common practice to make a test bar with the shielded arc electrode process and secure an elongation of from 25 to 28 per cent per each 2 inches. Also by drilling holes in the weld metal and then pulling the bar to the structure, these holes will be elongated in many cases as much as 50 per cent. Additional tests may very readily be made for ductility by making a weld on a piece of plate and then bending the plate through 180 degrees, which will give an elongation of the outside fibers of the weld of about 45 to 60 per cent without any sign of crack or harmful distortion appearing. The welds that are produced in a shielded arc also possess the same ductility as forged steel. This is very clearly demonstrated by welding two parallel bars together, then forging the steel and twisting it through 180 degrees or more. The effects of corrosion on the weld metal and the parent metal are also as important as the strength and ductility of the same and should be given serious consideration in the determination of the method or process of arc welding in the manufacture of many products which would naturally be subjected to excessive corrosion, acid fumes, bad weather conditions, or that are to be buried in the ground, such as oil and gas pipe lines.

Several methods or processes have been evolved from time to time in an effort to shield the arc from the elements which tend to combine with molten weld metal and impair the physical properties of the weld. In all of these processes some agent having a greater affinity for oxygen and nitrogen than the molten metal is introduced in the arc stream to deoxidize the atmosphere surrounding the arc. Within the past two years two particular processes have been obtained and have been used to a large extent in the welding field during this time. Both consist of a very heavily coated electrode in which the metal core of the electrode melts faster in the arc than the coating. Thus the projected coating forms in effect a crucible in which the electrode metal is melted. This projected coating shields the arc stream from the surrounding atmosphere for almost the entire length of the electrode. However, as the edge of the coating burns in the arc quantities of carbon monoxide is given off. The carbon monoxide being one of the greatest deoxidizers known combines with the oxygen of the atmosphere surrounding the arc, thus leaving no oxygen or nitrogen to combine with the molten metal. Thus the use of both chemical and mechanical action assures a completely shielded arc in the shielded arc process of welding.

The procedure in the use of this process requires that the polarity of the welding current be reversed from that used in ordinary arc welding and a current of 50 to 100 per cent higher voltage in amperage is required. This higher heat required with the shielded arc process permits a welding speed two to three times as great. This applies not only to welding in a vertical position, but also to vertical or overhead welding. Due to the higher welding currents required, welding machines of higher capacities are necessary.

Dresser Mfg. Co. and Merco Nordstrom Will Effect Consolidation

BRADFORD, Pa., Apr. 25.—At a meeting of the board of directors of the S. R. Dresser Manufacturing Co. a plan for the consolidation of the business of their company with that of Merco Nordstrom Valve Co. of San Francisco, Calif., was approved. A new Delaware corporation to be known as Dresser Nordstrom Co. will be formed to take over the capital stock of each of the two companies. The necessary papers went out to Dresser stockholders so that the transfer may be accomplished at once. The directors and stockholders of Merco Nordstrom Valve Co. have already approved the plan.

The consolidation of these two companies, who are leaders in their respective lines, which are quite closely allied, is regarded by officials of both companies as a progressive movement which will prove advantageous to the industries which they serve.

It is expected that economies in administration and marketing will be effected ultimately but no immediate changes in personnel or policies are contemplated.

MICHIGAN FIELDS

(Continued from page 34)

plugged back for production of about 20 bbls. in the upper Traverse. Dundee was topped at 3,514 feet and pay at 3,554-63 feet. Bottom water was encountered at 3,608 feet. Nonporosity of the Dundee is said to have accounted for failure to make big production as it is a diagonal offset to the Pure's Holmes well which made 1,400 bbls. initial.

Henry M. Brown's No. 2 McKay and Mercier, C SW SE, Section 1-17n-5w, Surrey Township, Clare County, was dry in the Marshall formation where it was hoped to find gas in commercial quantities. It was shut down at 1,508 feet but may be drilled deeper for a test of the Traverse and Dundee.

The new dry gasser was the Lima Oil Corp.'s No. 1 Louis P. Haight, NE SW, Section 9-10n-16w, Muskegon Township, Muskegon County, which made more than 200,000 feet in the Monroe.

The first showing of gas was struck at 2,183 feet and the heaviest flow of gas was encountered at about 2,209 feet. The well was bottomed at 2,218 feet and the flow gauged at 126,240 feet, approximately doubled with a shot.

Two new wells in Vernon Township, Isabella County, and one in Broomfield Township were to be spudded in this week.

Three new permits were issued: M. I. Diamond's No. 1 M. I. Diamond, NW NE SW, Section 15-20n-17w, Grant Township, Mason County, south of Manistee; E. Brown Oil Development Co. and others' No. 1 Homer Campbell, C NE NE, Section 35-16n-4w, Vernon Township, Isabella County; and Guy Carlton Irvine's No. 1 City of Allegan, Pingree Park, Section 28-2n-13w, Allegan Township, Allegan County.

The new Allegan well will be located in the city near the banks of the Kalamazoo River. Several old wells drilled in the city about 40 years ago had showings of oil in the Traverse at about 1,300 feet deep. Allegan is about 50 miles south of Muskegon.

Salt water was struck at about 4,000 feet in C. R. Smith's No. 1 J. Jorgenson, SE NW, Section 21-22n-9w, Haring Township, Wexford County, about 100 miles north of Muskegon, but the hole has not yet been abandoned.

Two wildcats located on a line northeast of the proved Muskegon Field are about to be drilled into the upper and lower Traverse, and are being watched as possible discovery wells of new pools.

The upper Traverse limestone was struck in H. and W. Feicke's No. 1 Feicke, SE SW Section 1-11n-17w, Fruitland Township, at about 1,840 feet and the well was drilling at more than 1,850 feet Saturday.

H. C. Nelson's No. 1 Arvid Nelson, SE NW, Section 24-12n-18w, White River Township, Muskegon County, set casing early last week at about 1,900 feet preparatory to drilling into the lower Traverse at from 1,950-2,000 feet.

Prospects of opening a new Muskegon County Field in the vicinity of Montague are considered fairly good from structural indications in this and other wildcats drilled during the past two or three years.

NOTICE TO WESTERN SUBSCRIBERS

Effective with the April 23, 1931, issue The Oil and Gas Journal has made a complete revision of the mailing schedule which affects the States of California, New Mexico and Arizona as follows:

All California, New Mexico and Arizona is now mailed from Tulsa at 7:30 a. m. Wednesday on Frisco Train No. 9 to Oklahoma City, Okla. From Oklahoma City via Rock Island to Tucumcari, N. M.; from Tucumcari, N. M., to destination via Southern Pacific. Train should reach destination even at the most distant points some time Friday so that delivery to mail subscribers will be effected Friday and surely not later than Saturday.

For comparison certain points are listed showing time trains formerly arrived and when they now arrive:

	Formerly arrived:	Should now arrive:
Tucumcari, N. M.	1:15 a.m. Friday	12:55 a. m. Thursday on Train No. 11
Phoenix, Ariz.	10:45 p. m. Friday	9:25 p. m. Thursday on Train No. 11
Los Angeles, Calif.	5:45 p. m. Friday or 7:00 a. m. Saturday	7:55 a. m. Friday on Train No. 11
San Francisco, Calif.	8:15 a. m. Saturday or 7 p. m. Saturday	11:00 p. m. Friday on Train No. 77
San Diego, Calif.	9:30 p. m. Friday or 12:15 p. m. Saturday	10:30 a. m. Friday
Pasadena, Calif.	5:10 p. m. Friday or 6:30 a. m. Saturday	7:20 a. m. Friday
Santa Barbara, Calif.	9:35 p. m. Friday or 10:40 a. m. Saturday	12:05 noon Friday
Bakersfield, Calif.	7:50 p. m. Friday or 8:50 a. m. Saturday	1:40 p. m. Friday
Fresno, Calif.	11:30 p. m. Friday or 12:01 p. m. Saturday	4:20 p. m. Friday
Oakland, Calif.	3:11 a. m. Saturday or 6:58 p. m. Saturday	6:31 p. m. Friday
Long Beach, Calif.	9:00 a. m. Saturday or 6:00 p. m. Saturday	About noon Friday via Southern Pacific electric terminal
Alhambra, Calif.		7:20 a. m. Friday

OKLAHOMA GEOLOGICAL SURVEY IS ABOLISHED

OKLAHOMA CITY, Okla., Apr. 22—The office of the state geological survey at the University of Oklahoma was stricken when Gov. W. H. Murray announced his vetoes of institutional appropriations.

The bill, carrying appropriations of $19,546,019.78 for the next biennium was reduced by $94,840. Of this amount $75,989 providing for the geological survey director, the position now held by Dr. Charles N. Gould, and assistants and expenses, was deleted.

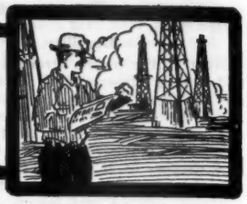
TEMPERATURE OMITTED

In the advertisement of the M. W. Kellogg Co., of New York, Los Angeles and Tulsa, on page 88 of the April 2 issue of The Oil and Gas Journal, part of the text matter giving the temperature was omitted. The complete copy should have read as follows: "Two 10,000-bbl. Kellogg high pressure cracking pipe stills built for operation at 750 pounds back pressure on the furnaces in a Pacific Coast refinery. Using a California residuum, these units each produce cracked gasoline, gas oil and a high grade fuel oil with a viscosity less than 200 seconds Furol at 122° F."

T NORTH TEXAS AGRICULTURAL COLLEGE, ARLINGTON, TEXAS

CLASSIFIED WANTS

Read by Oil Men Everywhere



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Compute white space at the above rates.

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Mail your Classified Advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

EQUIPMENT WANTED

AM IN THE MARKET for standard steel 84 foot drilling rig and heavy duty rotary steel drilling rig. Also both standard and rotary drilling tools. Also casing in all sizes from 20" to 5½". Also steel tanks of various sizes. All equipment must be first class and very cheap. Address Box 467, Red Cloud, Nebraska.

FOR SALE—EQUIPMENT

FOR SALE FOR LEASE
Four 10,000-gals. tank cars coiled. 50 ton trucks. Victor Car line, 111 West Jackson Blvd., Chicago, Ill.

Two practically new Buckeye Ditchers, with lots of spares, only been used a few months. Model 35. Two Buckeye Backfillers and one Cleveland Tamping Roller. Terms is desired. Guaranteed 98% new—for half price. M. Wenzel, 4029 S. Benton, Kansas City, Mo.

12" STANDARD - WIELAND PIPE MACHINE, Complete, Excellent condition. 32"x22" Bradford Lathe, 5⅞" hole in spindle; taper attachment. Complete. 12"x10' Ingersoll-Rand Tpye ER1 air compressor, motor drive, complete. Also large stock of other machine tools. Five hundred machines in stock. Send for catalog. Terms to responsible parties.
CINCINNATI MACHINERY & SUPPLY CO.
26 West Second St. Cincinnati, Ohio

FOR SALE—Slightly used Ingersoll-Rand steam two stage, 250-pound air compressor. Piston displacement. 312 cubic feet per minute at 200 r.p.m. Complete with intercooler and receiver. Write Box E-456, The Oil and Gas Journal, Tulsa, Okla.

USED EQUIPMENT

For gasoline, production, pipe line and drilling branch of oil industry. Enormous stocks of equipment to choose from at minimum cost. Let us save you money by serving as a medium through which to buy and sell your used equipment.

OIL FIELD EQUIPMENT EXCHANGE
Mid-Continent Oil Companies
Official Clearing House

308 Ritz Bldg. Tulsa Phone 4-8168

FOR SALE CHEAP: A practically new gas-powered Sullivan Core Drill. Write Box E-473, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE AT BARGAIN—Ten Railroad Tank Cars Class III, 8,000 gallons, heater coils, safety valves, etc., now in service. Delivered free in South. Write Clark, Box 1612, Shreveport, La.

FOR SALE—EQUIPMENT

FOR SALE

12,000 feet 4-inch, 12¾-pound external upset seamless A. P. I. tubing. Once run.

PURCHASING DEPT.
I. T. I. O.
Bartlesville, Okla.

100 OIL and gas engines for sale. Superior, Reid, Franklin, Foos, Black Bear and Primm 15 to 80 H.P. in fine order; new models, low prices. Edward A. Schambs, Jr., Box 868, Wichita Falls, Tex. Phone 6356.

BUSINESS OPPORTUNITIES

DEEDED MINERAL interest spread covers 6 tracts one under 5,000 barrel well in Rusk County new field. Write for map. ¼ mineral rights 142 acres Bee County 1,200 feet from 450 barrel well $250.00 basis. 7,905.5 acres new 10 year paid up lease ¼ royalty same term Edwards County, Texas, in active line of play $1.25 acre. Stieren & Koenig, Alamo National Bldg., San Antonio, Texas.

OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses, 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

DRILLING Blocks, East Texas, 3,500 to 10,000 acres. Maps, geology. W. G. Singletary, 5921 Preston Road, Dallas, Texas.

TOPPING Plant Operators—You can economically increase your gasoline yield. Communicate with Practical Petrolist, Box 77, Belleville, Illinois.

EXTREME LOW DRILLING COSTS and gusher (up to 5,000 bbls.) production make Williamson County, Texas, serpentine plugs the best venture. $4,000 to $8,000. Covers entire cost of blocking and the drilling of the well. Inquiry solicited.
NICOLLE & NICOLLE
Geogologically Selected Drilling Blocks
P. O. Drawer 1720 Fort Worth, Texas.

WHY—Are you spending thousands for exploration to locate structure; drilling, producing, and trying to market in a region of overproduction? Why not, drill the world's most unusual structure, proven to have tremendous possibilities. Location in relation to markets cannot be equaled. Driller wishes to interest individual who can make trip of inspection and get the facts on the ground. Write Box E-468, The Oil and Gas Journal, Tulsa, Okla.

SALESMANAGER WITH $5,000, to join old New York brokerage house, build up oil royalty sales force and clientele, handling large transactions. References. Parmer and Company, 25 Broad St., New York, N. Y.

Have several thousand acres in the great Fort Morgan Field (Colorado) close to production. Want drilling proposition. Ed Rikhoff, 1284 Downing St., Denver, Colo.

COMPLETE SKIMMING PLANT located at Denison, Texas, for rent, sale, or will operate on partnership basis with experienced refineryman. Don't write, wire E. S. Lacey, Denison, Texas.

FOR SALE—As a whole or will stock, 100 acres in Cumberland County, Kentucky. Tested territory and good production close. Write Wm. G. Trickey, 67 S. Hazelwood Ave., Newark, Ohio, for full information or appointment.

REFINING PATENTS—Three applications pending: Vacuum distillation, vapor phase cracking and gas polymerization. Want capital to develop here and patent abroad. Write Box E-457, The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITIES

CURTIS BROKERAGE COMPANY
dealers in
Used Oil Field Equipment
for
Drilling, Production, Gasoline and Pipe Line Departments.
List your surplus with us.
And advise us of your needs.
S. O. Curtis, P. O. Box 1214.
Seminole, Oklahoma.

YOUNG COUNTY, TEXAS
Settled shallow production 20 acre, two producing wells making 11 barrels production daily; 520 feet, two proven offsets, room for six locations, full 7/8th lease for quick sale $4,400.00.
R. E. MOORE
GRAHAM, TEXAS.

A-1 DRILLER (Cable Tool) to cement and deepen 4,400 foot well. Must have, or be able to interest parties to invest $4,000 to $7,000 to finish test. 20,000 acres under lease. Write Box E-471, The Oil and Gas Journal, Tulsa, Okla.

SIZEABLE MARKETER wants to contact producer or refiner with the idea of either taking reasonable output regularly or buying outright wells, refinery, or both. Interested up to several thousand barrels daily. Box 96, Euclid Station, Des Moines, Iowa.

JOBERT OIL DRILLING COMPANY offers fifty divided assignments interest nonassessable in drilling well on forty acre lease, mile and half from production Kilgore, Texas. Interest money back from first oil runs before company receives a cent. One thousand dollars per. Send money to Citizens Bank or 300 South Saunders St., Tyler, Texas. No stock or units but ownership interest. Total interest in seven-eighths lease one hundred. Jobert Petroleum Company, 300 South Saunders, Tyler, Texas.

OWN 2,000 acres fee Southeast Clark County, Arkansas. Can get four thousand adjoining. Good volume gas struck 521 feet. Drilled deeper to 1,320 feet. Operator broke, well abandoned. Want responsible party to finish or make new location. Proven structure on highway. Address A. P. Greene, Arkadelphia, Ark.

YOUNG COUNTY, TEXAS
22 acres, one well making 3 bbls. daily, for quick sale $1,200.00; equipment cost $1,000.00 production 580 feet.
R. E. MOORE
GRAHAM, TEXAS.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER, ALLWINE & ROMMEL
240 Ouray Bldg., Washington, D. C.

INVENTIONS and patents sold. Outright or royalty. Free examination. Leading firm in country. H. G. Green Co., 180 West Washington St., Chicago, Ill.

PATENTS—Write for our book, "How to Get Your Patent," and evidence of invention. Send model or sketch of invention for our examination and instructions free. Randolph & Co., Dept. 472, Washington, D. C.

HAVE you a good patent or pending application for sale? If so, write American Patents Corp., 1134 Barrister Bldg., Washington, D. C.

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

MONEY RAISING

English Company is in a position to find capital for sound producing Oil Royalty propositions where we are satisfied good returns can be obtained. Issues made where further capital is required for paying concerns with good past results. References required. Send fullest particulars in first instance to:

"Capital"

The Oil and Gas Journal,
Tulsa, Oklahoma.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, PA., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

IF YOU WANT your securities or proposition intelligently submitted to underwriting and security selling houses in New York, write W. W. Hines, Room 803, 150 Broadway, New York City.

CORPORATE FINANCING
Our distributing facilities are broad enough to handle all types of issues, both large and small, for those desiring capital through the sale of securities. The Brookworth Co., Inc., 110 East 42nd St., New York, N. Y.

CAPITAL: An exp. dependable broker will aid in financing projects of merit. Amster Leonard, East Orange, N. J.

SOUND PROPOSITIONS seeking capital for development or expansion send details. S. I. C., 82 Wall Street, New York City, N. Y.

CAPITAL—Call or send facts about high grade oil projects to James E. Miller Co., Room 200 New Brady Hotel, Tulsa, Okla.

WANTED

WANT BEST Proposition to drill my Van pool lease; also to complete Ector Co. well. Anderson, Linz Bldg., Dallas, Tex.

GAS PROPERTY with substantial market, production, proven acreage, earning power and expansion possibilities. Write Box E-472, The Oil and Gas Journal, Tulsa, Okla.

WANT TO BUY

Small refinery or make connections to buy products of good independent refinery.
D. E. CARPENTER
1604 Forest Ave.
Des Moines, Iowa

SHEEP RAISING

SHEEP RAISING IN CANADA DURING THE PAST YEAR SPECULATIONS have proven disastrous. Invest with safety in the World's most profitable natural industry SHEEP. Own your own. We ranch them without cost to you and guarantee your profits. Send 50c for full information. Postage stamps not accepted.
BOW ISLAND SHEEP CO.,
303 Alberta Corner
Calgary, Alta.

STEER HORNS

STEER HORNS
Longest horns for sale in Texas; polished and mounted; rare ornament for office; priced reasonable. Lee Bertillion, Mineola, Tex.

CLASSIFIED WANTS

Create and Build Sales

LEASES—PRODUCTION

EAST TEXAS SPECIALS

For two years I have been quietly buying leases and royalties, before drilling started, and I am now in position to sell holdings close to wells just starting to drill. Some in a few hundred feet of derrick. No mail order stuff. Save your stamps. But if you mean business and want real bargains come and make personal inspection. L. D. Bertillion, Mineola, Texas.

10,000 acres ⅞th leases for well Grenada County, Miss. 2 yrs. free rentals 25c per acre. Best geology. 217 Court St., Memphis, Tenn.

NEW MEXICO oil leases and royalties Lea, Chaves, Roosevelt, DeBaca, Guadalupe Counties. Roy G. Barton, Clovis, New Mexico.

OIL LEASES AND ROYALTIES
Bought and Sold.
In the Hobbs Pool,
Lea County, N. Mex.
A. L. Gurley, Clovis, N. Mex.
P. O. Box 211 Phone 392

MINERAL DEEDS—LEASES

Mineral deeds under major company leases or accompanied by leases. Stevens-Morton County area, Ness-Trego-Gove area in Kansas and Beaver-Texas Counties, Oklahoma area.
J. W. SAIN
310 Brown Building
Wichita, Kansas.

A REAL OPPORTUNITY

Four thousand acre gas leases for sale. Proven territory forty cents year around market. Shallow drilling, 4 sands, deepest twenty five hundred feet. Will stand closest investigation. Charles E. Karns, Drilling Contractor, 202 Claremont Ave., Ashland, Ohio.

FOR SALE: 40, 80, or 240 acre oil and gas lease, Real County, Texas. About 5 miles west of Gant, Kilgore, and Evans Well now drilling. Cohn, Grand Junction, Tenn.

FOR LEASE

4,480-acre block in Irion County on line between Howard-Glasscock Pool and Mertzon shallow pool, close to 15,000-acre block recently leased by Benedum-Trees. Two 5,000-acre blocks in west Menard County on good structure. Two 2,500-acre blocks, Concho County, near two drilling wells and on good structure. Address H. B. Opp, Menard, Texas.

YOUNG COUNTY OIL LEASE

20 or 40 acres new 10 year 88 Form Commercial Leases, first class title for quick sale $4.00 per acre. This lease would make an excellent speculative investment.
R. E. MOORE
GRAHAM, TEXAS.

NEW MEXICO STATE Oil Leases: new five year De Baca County, $2.50 per acre. C. I. Skoyen, 235 East Spruce St., Inglewood, Calif.

EAST TEXAS leases and royalties close to developments very cheap. Also drilling blocks. Address P. O. Box 935, Nacogdoches, Tex.

$50 WILL BUY GOOD INTEREST in proven lease and well in heart of great East Texas oil field; almost surrounded by producing and drilling wells. A. L. Farrell, Grand Saline, Tex.

ROYALTIES—PRODUCTION

Oil and Gas Royalties and Investments. 20 years' experience in the Oil Fields.
1423 Hunt Bldg.,
Tulsa, Oklahoma
Phone 2-6261
A. K. RILEY

UNDER THE BIGGEST WELLS
In East Texas
ROYALTIES AT REASONABLE PRICES
Quick Deliveries
John L. Dickson, Box 1037, Tulsa, Okla

ROYALTIES—PRODUCTION

FOR SALE: Perpetual deeded oil royalty, located in the great potential oil fields of Lea County, New Mexico. Also 5-year oil and gas leases. Prices reasonable. Terms easy. Possibilities great. Monarch Inv. Co., Roswell. N. Mex.

FIND OUT FIRST!

In whatever phase of the oil business you may wish to invest—Leases, Production, Natural Gas, Royalties—it is a good plan to "find out first."

Avoid costly mistakes and disappointment.

Unless you are trained by education and experience to judge values and possibilities, you may need the guidance of those who are so educated and trained.

Such service is at your disposal; we are thoroughly equipped, with trained men here and in the field, and with the necessary plant and equipment, to give you reliable appraisals based upon known geological and development conditions, of any producing or potential oil or gas property—no matter where located.

NATURAL GAS & PETROLEUM
RESEARCH CORPORATION
122 East 42nd Street.
NEW YORK CITY.

EAST TEXAS ROYALTIES—Gregg, Rusk, Cass, Marion, Harrison Counties. Big list. Harry Haynes. Grantville, Kans.

ROYALTIES: Carefully selected, choice royalties in the Oklahoma City and East Texas pools, which if bought today on the basis of conditions as they are, will certainly make money. We have these and some few good buys in the older more settled areas, as well as royalties of a more speculative character. As a broker whose business it is to investigate, select and offer the best buys on the market and who must keep his customers making money in order to keep them and to stay in business, will appreciate the opportunity of figuring with you and keeping these selections before you. J. B. McAnally, 1118 Hunt Bldg., Tulsa, Okla.

If you can invest $100 cash or part payments write us about our 60,000-acre royalty spread. Greatest plan ever devised.
EAST TEXAS PRODUCTION CO.
allas Bank and Trust Bldg., Dallas, Tex.

$12.50 BUYS DEED, part oil, two oil royalties City Pool. Ed Milam, Dept. J., Oklahoma City, Oklahoma.

LAND, all royalty, on Geological and core drill structure, oil fields, Oklahoma County, adjoining location for well. Health forces sale, one-fifth value. George W. Seckman, Edmond, Okla.

FOR SALE—¼ royalty under 4,000-acre block, Concho County, near two wells now drilling. H. B. Opp, Menard, Texas.

MID-CONTINENT OIL ROYALTIES
Royalty Sales Company
Suite 523
105 North Clark St.,
Chicago, Ill.

TEXAS ROYALTIES

If you require a connection that will enable you to deal in Texas Royalties with the same confidence you would have if you were on the ground yourself, write

J. F. MARION OIL COMPANY
Magnolia Bldg.,
Dallas, Tex.

ROYALTY FOR SALE

UNDEVELOPED Royalty, Western Kansas, under 10 yr. lease to reliable oil company, pays $80 rental annually. Price $275 per quarter section. Address Owner, Box 1227, Muskogee, Okla.

ROYALTIES—PRODUCTION

HEADQUARTERS
FOR ROYALTIES

We maintain a complete organization in New York, and in Tulsa (with reliable connections in other oil field centers) for the handling of all kinds of Royalty transactions—buying, selling, investigating.

Royalty Dealers, Salesmen, Investors and Royalty Investment Companies can save time, money and avoid mistakes by using our service.

We are members of the Mid-Continent Royalty Owner's Association, and we enthusiastically support the Association's code of ethics.

THE LAND & ROYALTY CORPORATION
37th Floor CHANIN TOWER,
NEW YORK.

Postal Telegraph Wire in our Office.
Telegraph Address: "CDX NEW YORK."

ECTOR Co. ROYALTY joining Gulf block, few miles of new Rector, Ward Co. well between it and Penn pool and near Wurtz well. Part cash. Anderson, Linz Bldg., Dallas, Texas.

OPPORTUNITY — $25 buys 1/512 landowners royalty in tract near production; Rusk County, Texas, field. Lewis De Geurin, Box 112, Overton, Tex.

EAST TEXAS ROYALTIES on geology head of production with wildcats drilling close. Sensible prices and individual direct deeds. See maps and geology and pick your own play. Wells drilling make promptness important. R. R. Fisk, 1214-C, Wichita Falls, Tex.

MID-CONTINENT OIL ROYALTIES at reasonable prices and with assurance of safety. Past record "Chicago dealer since 1920" indicates quick return of principal and handsome profit. Write me. J. A. Wolf, 208 South LaSalle St., Chicago, Ill.

ROYALTY RECORD

Form shows rental record, mortgage record, expenditures, sales record, tax record, well record, monthly production record. All on one sheet; size 8½"x11"; punched to fit standard ring binder. Convenient for desk or brief case. Sheets—$5 per 100; fine leather binder, $5.25; leather tabbed index, $1.20. Order this complete record today. Know what you own and its condition.

E. L. STECK CO.
Austin, Tex.

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

RANCHES AND FARM LANDS

FOR SALE—640 acre in Southeast Missouri. 400 acres in cultivation, very fertile, wonderful improvements. An ideal home. A regular show place. Write Dr. R. L. Montgomery, Tuscumbia, Alabama.

FOR SALE—MAPS

EAST TEXAS MAPS. Gregg and Northwestern Rusk Counties. Development, Survey Boundaries with survey index easily followed. Paper 20"x24". $2.00 each. Tulsa Map Co., 509½ S. Boulder, Tulsa, Okla.

SOUTHEAST NEW MEXICO
MAPS
Send for list.
THE M. H. HUNTER, CO.
Roswell, N. Mex.

OIL DEVELOPMENT maps, any county in Oklahoma, 75 cents each; lease block and detail maps. Write for map list. Lindsay Map Co., Franklin Bldg., Oklahoma City, Okla.

CLASSIFIED DISPLAY RATES

The rate for Classified **Display** Advertising set in similar style to this Ad or in two Column style is as follows for each insertion:

1 inch	1 Time	$5.00
1 inch	13 Times	4.50
1 inch	26 Times	4.00
1 inch	52 Times	3.50

Rates for Classified without display shown on opposite page.

One point borders and ten point capitals are allowed, larger type not accepted.

Changes in copy must be in our office 10 days in advance of publication date.

Mail your advertisement to the Largest Classified Section in the Oil Industry.

THE OIL AND GAS JOURNAL
TULSA OKLAHOMA

FOR SALE—MAPS

EAST TEXAS MAPS
Combination map "Superior" covers all oil operations in Rusk, Smith, Gregg and Upshur Counties. Shows landowner and development to date. 36"x48". Paper $5.00. Cloth $7.50.
OIL CITY MAP CO.
Box 843
Longview, Texas

POSITIONS WANTED

MIDDLE-AGED business man, just relieved from position on account of merger, will consider proposition from a reliable concern wanting office executive or business manager. Any legitimate line of business will be considered. Address Box E-444, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE ENGINEER: Five years refinery experience in designing, steel, concrete, pressure vessels, fractionating equipment and distillation. Desire position in refinery engineering office. Married with family to support and want permanent position. Write Box E-464, The Oil and Gas Journal, Tulsa, Okla.

COMPTROLLER, AUDITOR, OFFICE MANAGER, 34 years of age, with wide experience including five years public accounting, budgeting, system work, etc., desires permanent connection with reliable oil company. Excellent references. At present employed. Write Box E-458, The Oil and Gas Journal, Tulsa, Okla.

CONSTRUCTION SUPERINTENDENT—Specializing in Service and Bulk Stations. Qualified to handle several projects concurrently. Can furnish best of references and will go anywhere. Write Box E-476, The Oil and Gas Journal, Tulsa, Okla.

AT LIBERTY JUNE 1—Young man, two years college, two years drilling and production experience, and two years supply business. Now with leading manufacturer of rotary drilling machinery. Knows costs and material. Draftsman. Desires job where experience is valued, with chance for advancement. Salary no object. Write Box E-469, The Oil and Gas Journal, Tulsa, Okla.

OIL REFINERY CONSTRUCTION SUPERINTENDENT, 18 years experience on construction of oil refineries, coke plants, power houses and casinghead plants. Familiar with all types of cracking plants. Best of references. Will go anywhere in world. Write Box E-465, The Oil and Gas Journal, Tulsa, Okla.

TURN TO PAGE 95 FOR ADDITIONAL CLASSIFIED ADS.

Bunker C Oil Price Is Reduced in East

For the First Time Since 1922, Quotation Drops Below Dollar Mark. Remainder of Refined Market Easy

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Apr. 27.—The outstanding development in the East Coast refined products market last week was a reduction of 10 cents per barrel in the posted price for bunker "C" oil, carrying the market down to 95 cents per barrel, and marking the first time since 1922 that the price of this oil has broken under the dollar mark. A search of the records of principal sellers here discloses that the previous record low on bunker "C" oil was in November, 1914, when prices broke to 89¼ cents per barrel, from the previous low of 94¼ cents per barrel attained in July of the same year. The lowest price since 1914, up to the present time, was in 1922, bunker "C" declining on February 27 of that year to 98½ cents per barrel. This was at a time when Atlantic Coast markets were still being flooded with Mexican crude and fuel oils, but even under the abnormal competitive conditions prevailing at that time, bunker oil remained under the dollar level for only about one month, at which time the posted price was jumped to $1.10 per barrel.

The current quotation for bunker oil, therefore, stands as the lowest posted price in the past 17 years, and the weakness of the current market situation, from the standpoint of the heavy oils, is illustrated by the fact that even at the extremely low price now existing for bunker "C" fuel oil, the market cannot be called steady, and some price cutting under the posted quotation is anticipated.

There were no developments of outstanding importance in the remainder of the refined products market, and an easy undertone was still in evidence on most products. The announcement in mid-week that proration had at last been achieved in East Texas was received with a good deal of relief in East Coast market circles, and it appears to be generally felt that this action has removed one of the most pressing adverse factors in the current market situation.

Will Curtail Further

East Coast refiners, who have curtailed their operations somewhat during the first quarter of the year, are confronted with the necessity of further radical cuts in their proudcing schedules, and it is now believed that the balance of the current quarter will witness still further reductions in crude runs at refineries in this area, with every effort to be made to further cut down refinery holdings of products in this area. General adherence to this curtailment move, it is felt, will enable East Coast markets to absorb considerable quantities of distressed Gulf Coast and California refined products during the summer months with a minimum of disturbance to price levels in this area.

The drop in export demand for refined products thus far in the year has been felt greatly by many refining interests in the East, notably some of the smaller refiners who in previous years moved considerable quantities of products into foreign consuming channels, and the world market situation is now coming in for very close attention. Much of the recent news, however, has been far from favorable, and there is now a definite trend on the part of many consuming countries formerly supplying a large part of their requirements in the United States to establish their own refining industries. While this development, it is believed, will make for an increased export movement of American crude petroleum, the benefit of this new business will be received by the producers in some of the new low-cost flush production areas, such as East Texas, and a good deal of this export business is apparently irrevocably lost to the interests which formerly enjoyed these sales.

News from Rumania in recent weeks has been slightly more constructive, and it is indicated that the extreme low prices at which Rumanian gasoline has sold thus far in the year are now a thing of the past. Rumanian pipe line construction, however, is receiving new impetus, and provision for expanding that country's export trade in gasoline and other light products is being made by the increase in the carrying capacity of the government controlled gasoline pipe line which is used to transport gasoline and other light products from interior refining points to the Rumanian exporting terminals at Constanza, which is located on the Black Sea. Russia, likewise, is providing for the intensification of its world petroleum marketing operations through the construction of new pipe lines to seaboard refineries and important additions to the Soviet tanker fleet.

Refinery Gasoline

While favorable weather conditions have materially stimulated gasoline demand in the East Coast refinery market during the week, an unsettled undertone still exists, and the market is far from stable at posted levels, which range 6¼ to 7½ cents per gallon for U. S. Motor in tank car lots at refinery terminals.

There appears to be considerable gasoline held by smaller interests in the New York area, and these sellers are reported to be freely shading posted prices in an endeavor to liquidate their stocks, and at the same time build up a "following" among independent marketers operating in the local territory.

Although leading refiners are expected to make an effort to stiffen the market position in time to achieve some degree of stability before the season of heaviest consumption begins, reports of sales of tanker shipments of Gulf and California gasolines for delivery in East Coast territory during the coming summer months indicate that competition in tank car and barge load sales will be intensified, rather than minimized, during the summer months.

The decision to prorate production in the new flush East Texas pools has improved the market outlook here somewhat, and has removed to some degree at least the menace of more or less promiscuous dumping of gasoline refined from distressed East Texas crude.

East Coast marketers, in addition, are counting on the curtailment of imports of crude petroleum and gasoline during the current quarter to help bring about better conditions in the eastern gasoline market. The drop in imports, it is believed, will aid materially in permitting the eastern market to absorb low priced Gulf crude and distressed stocks of California and Gulf gasolines which have been offering here for nearby delivery recently at prices substantially under a parity with the existing posted market here.

Marketers are not contracting ahead to any extent for motor gasoline, unless sellers quote them unusually low prices and surround their contracts with various precautionary clauses protecting the buyer against price decline, and under the circumstances, the larger refiners are not inclined to press their buyers much for forward contract business, preferring to confine their operations largely to the spot position until the general market position registers more pronounced improvement.

Tank Wagon Gasoline

Irregular markets for gasoline in tank wagon and service station channels prevail at most points in East Coast territory, and leading interests as yet have not taken any definite steps to correct this situation.

The current situation indicates that leading interests will permit the market to drift until later on in the season, it being pretty evident that even in the event that the major marketers were to put into effect a general reduction in posted prices, independent marketers, working on cheap, distressed gasolines, would still be in position to go them "one better."

While price cutting at retail stations is still much in evidence, there has been some improvement in this branch of the market noted in some parts of the local territory. The Brooklyn market, which has been a hotbed of competition since the beginning of the year, with leading brands retailed at 7 to 8 gallons for $1, including the state tax of 2 cents per gallon, has now definitely firmed up, and the general asking level at retail stations is 1 to 2 cents per gallon over recent levels. Other parts of the territory have likewise shown some improvement in this respect, but these gains, in many instances, have been offset by renewed price cutting at other points.

Bunker Oil

Increased competition in the market for bunker "C" oil, indicated not so much by current price cutting as by indications of pending heavy shipments of distressed Gulf Coast and California oil into eastern seaboard markets, brought about a general lowering in the posted price this week, Standard Oil Co. of New Jersey taking the lead in a reduction of 10 cents per barrel to 95 cents at New York, Boston, Baltimore, and Norfolk, and to 90 cents per barrel at its terminal at Charleston, S. C.

Notwithstanding the weakness in the bunker oil market, business in this division of the market has been unusually good during recent weeks, and the price cut reflects oversupply rather than any falling off in the demand.

Diesel Oil

The break in bunker oil prices during the week did not affect the Diesel oil situation, and leading refiners continue to quote the market at $1.75 per barrel, in bulk, f.o.b. refinery terminals.

Contract withdrawals of Diesel oil are running slightly ahead of comparable 1930 totals, in many instances, and the market outlook from the standpoint of consumption is favorable. East Coast refiners are holding down Diesel oil output as much as possible in an effort to avoid an overaccumulation of stocks which might force prices to lower levels, and the situation with respect to increased shipments of California and Gulf Coast Diesel oils into eastern markets is being closely watched.

Gas Oil

Volume continues restricted in the gas oil market, and prices are still subject to general shading. Refiners are quoting 28 plus recycled oil at 5¼ cents per gallon, but this figure is entirely nominal, and current trading is going through at 4¼ cents and upwards.

A seasonal slackening in demand is beginning to become evident, and it is expected that refiners will shortly announce a reduction in the offical posted figure to bring this quotation in line with the actual market.

Lubs

The market has failed to sustain recent price mark-ups on cylinder oils, and quotations are lower this week on a number of grades. Spot 600 steam refined is quoted at 16 to 16¼ cents per gallon, the inside figure representing a half cent decline, with 635 steam refined off a half cent at 16½ to 17 cents per gallon and 650 steam refined registering a similar decline to 19½ to 20 cents per gallon.

Bright stocks have also reacted downward during the week, and the market for the light 140-150 grade is 1 cent lower at 25 to 26 cents per gallon, with a one-half cent decline on the dark to 23½ to 24 cents per gallon.

Compounders are taking cylinder oils in slightly better volume, but aggregate gallonage is not sufficiently heavy to make for a firm market, and traders who were showing more confidence in the market outlook earlier in the month are again inclined to restrict their operations to small lots for immediate requirements.

Red and pale oils have shown a slight pickup in gallonage, with a quickening in industrial consumption reported from several industries.

Wax

Heavy holdings at refineries are serving to keep the market in continued easy position, and a soft undertone has ruled throughout the week with the market barely steady at the lowered prices put into effect during the preceding week.

Domestic buyers are not covering forward requirements to any material extent, and while this makes for slightly more activity on the spot position, individual transactions are generally confined to small quantities, and the market position is unsatisfactory in most respects.

Export buyers are marking time and are inclined to defer placing orders until the last minute, in the hope of bringing forth further price concessions.

Petrolatum

An easy undertone rules in the spot market, but sellers have made no general reductions in quotations. Domestic consumption is moderately well maintained, and export buyers are inclined to come into the market whenever attractive concessions are available.

The position of the petroleum market is being aided to a considerable extent by the practice of a number of eastern refiners in utilizing their production of low grade petrolatum as refiner fuel, rather than forcing this stock on the market with resultant price demoralization.

Kerosene

Trading in the refinery kerosene market has been rather sluggish during the past week, and the market remains unchanged at a range of 5¾ to 6 cents per gallon for 41-43 water white in tank car lots, the top figure being the "official" posted quotation.

Developments in the tank wagon kerosene situation have likewise been lacking during the period, and posted prices remain unaltered throughout the territory.

Export Market

The Gulf market remains inactive, with prices nominal. Offerings of 64-66 for 5½ cents per gallon have been reported, but foreign buyers are not interested in American gasoline at this price level. Kerosene and other refined products are also dull in export markets.

A cargo of 7,500 bbls. of Venezuelan crude for May shipment was reported sold to a Scandinavian refiner at 70 cents per barrel, f.o.b. terminal, this being the only cargo sale of the week. Reduction in posted prices for American crude has weakened the market for South American oil, the Venezuelan oil sale representing a drop of 6 cents per barrel from previous asking prices. Colombian crude, formerly priced at $1.18 per barrel, has been reduced to 88 cents, and Panuco heavy crude is now offering at 45 cents

(Continued on Page 106)

Third Grade Gasoline Plan Spreads

Refinery Market Marks Time While Retail Situation Is Being Straightened Out. Slow Movement of Fuel Oils

By Robert C. Conine

CHICAGO, Apr. 27.—Although little change was shown in the Chicago district last week in the refined products markets, several things happened in the service station gasoline price situation which serve to indicate that the price cutters are in for an unhappy siege from the same kind of artillery they have so long employed with increasing success against the major marketers. "Sinclair Green" was introduced at the Sinclair Refining Co.'s stations in Chicago Saturday. This third grade fuel is regular U. S. Motor gasoline and takes the place of the company's "Aircraft" brand which would experience slackened sales during the warmer weather when its qualities are not demanded.

The Sinclair company's third grade gasoline was posted at 11.25 cents, including the 3-cent tax, which is .75 cent below the price of "Stanolind Blue." Deep Rock Oil Corp. has entered the third grade field with a white gasoline. Another white gasoline to meet the cut rate competition is that of Pure Oil Co. The problem of color among the low price competition grades is becoming involved and there is considerable speculation as to what effect the blue and green choices for the third grade will have upon the gallonage of the regular brand fuels of these colors marketed by several of the major companies. The reaction among the cut-price operators themselves in the matter of colored gasoline will be discussed later. Deep Rock has given its cheaper gasoline the name "Value."

Shell Petroleum Corp. has acted in accordance with previous announcements reducing the price of its regular grade to 1 cent below the price of Standard Oil Co. of Indiana's regular grade, Red Crown, or 1 cent above "Stanolind Blue." The Shell company has also taken steps to protect its jobbers by offering a blue gasoline of U. S. Motor specifications to them on their marginal contracts so that they can meet the competition of the cut-rate operators and the majors handling the third grade. This cheaper gasoline offered by Shell is not to be sold at Shell stations and will be without brand. It is not to be known as "Shell Blue."

Standard Meets Competition

In Chicago the response of Standard of Indiana to Sinclair's action was prompt and "Stanolind Blue" met the price of "Sinclair Green" at noon Saturday. What the Standard company will do about Shell's 1-cent reduction on the regular grade is as yet unintimated. However, the feeling is general that the Standard company will rely upon its third grade to carry on the low price competition. And, while it is freely predicted that practically all of the larger interests will adopt the third grade motor fuel to meet the trackage station prices and to help them move large quantities of straight-run gasoline of low antiknock quality which have accumulated, it was generally accepted that Shell would not reconsider its decision to eschew a third grade of gasoline. It is pointed out that although Shell has more than two pumps at many of its stations, there are only two tanks at these stations and an investment of several millions of dollars would be necessary for Shell to follow the "Stanolind Blue" criterion.

A development which may mean that one of the major companies now marketing the cheaper gasoline will not be satisfied with merely meeting the price of the trackage station operators throughout the entire territory has been witnessed in the northern part of Minnesota and Wisconsin. Here one of the principal marketers struck a heavy blow at an organized group of price cutters, who have enjoyed a boom business for many months by lowering the price of the third grade fuel to 2 cents below the price of the lowest postings. Similar price cuts are reported in the Dakotas.

Where the cheap blue gasoline has made its entry a sudden partiality for this hue is noticeable among the cut-rate merchants and, quite ironically, it seems that the trackage station operator is contemplating the adoption of a third grade himself, or at least a second grade which will sell for 2 cents more than the low-price fuel and which will contain a commendable quantity of cracked gasoline to improve the antiknock rating. In fact, one broker whose business is sufficiently large to make his observations worth consideration, says that the cut-rate station operators are demanding a much better gasoline than in the past, asserting that higher octane numbers will help them to hold their own against the third grade gasolines introduced by the major companies.

In Indiana one of the larger cut-price marketers has published a full-page advertisement announcing his adoption of a new grade of gasoline of high octane number which is to be sold for 2 cents more than his regular grade. In the city of Chicago the signs of battle are clearly evident. The cut-price service stations, where 9 gallons of gasoline could be bought for $1 last week, are now shaving down the ante and the new proposition is 9½ gallons for a dollar. Another operator will throw in a quart of lubricating oil with each 10-gallon purchase.

Waiting Policy

It is incorrect to suppose that all of the larger companies have fallen in line on the matter of a third grade of gasoline. This situation is still far from settled and although four or five of the majors are moving rapidly to meet the low-price competition, a number are still watching developments from several angles: the possible reaction of the third grade gasoline against the regular brand gallonage; the danger of tying up a huge investment in equipment to handle a product which the public may soon begin to distrust as the automotive engineer continues to seek greater horsepower through higher compression ratios, and the possibility that a considerable group of zealous cut-price operators will stir certain jobbers to heroic efforts in the matter of obtaining greater margins with the possible result that the larger interests will be forced into buying huge quantities of a product they do not need to keep the refinery markets on gasoline from being completely demoralized. In connection with the last mentioned consideration the cheap price at which crude oil is now available is an especially telling factor. Just as the low refinery markets have made it possible for persons with very little capital to set up shop in the marketing business, the low price of crude has made every one a potential refiner of petroleum products. And these refiners, it seems, have but one thought in mind—to get rid of their products at any price. Thus, while the branded grades of gasoline are moving at 3¼ to 3½ cents (U.S. Motor) with fair steadiness, it is admitted that an order of 25 cars would break the market. At Detroit, U.S. Motor could be had in large quantities at 3 cents.

The markets on gasolines will continue to be upon an uncertain basis and liable to slip still lower until acceptable grounds for supposing that crude oil prices will improve are provided. Needless to say, interest is focused on East Texas moves at curtailment. In fact, it seems to be generally agreed in the Chicago district that the "hand-to-mouth" buying practice of a considerable number of the jobbers speaks of an uncertainty which nothing less than a sharp rise in crude oil prices will dispel.

With the approach of warmer weather a 64-66 gravity 390 endpoint gasoline marketed at 3½ to 3¾ cents takes the place of the same gravity gasoline of 375 endpoint which has been selling at 3¾ to 4 cents. Demand for 56-58 gravity 450 endpoint naphtha, which has been used extensively in blending with natural gasoline, is also reported out of the picture for the duration of warm weather. Natural gasoline, which has enjoyed little popularity, comparatively, in this section, ranges in price, for Grade A, 72-79.9, 375 endpoint, 1⅝ to 2 cents; for Grade AA, 80-87.9, 375 endpoint, 1½ to 1⅝ cents, and Grade BB, 84-92, 375 endpoint (85 per cent recovery), 1¼ to 1½ cents. The blended motor fuel, 64-66 gravity, 437 endpoint, dropped an eighth of a cent in the past week making the new quotation 3⅛ cents.

Kerosene

Kerosene sales the past season are reported to have fallen from 30 to 40 per cent below those of the corresponding period in the preceding year. Although there is very little activity in the kerosene market the price is still quoted at 2½ to 2¾ cents for the 41-43 water white, and 2⅝ to 3 cents for the 42-44 water white. The mildest winter that Chicago has experienced in many years also has its effect on sales of furnace oils.

Not content with deserting kerosene for low-priced gasoline on the one hand, and distillate on the other, as fuel for tractors and stationary engines, the mild weather has enabled the farmer to eschew motor fuel altogether and bring thousands of horses out of retirement. A recent survey showed that two out of every three farmers in this section have forsaken the tractor for the horse.

Fuel Oil and Gas Oil

As for straw distillate, although the price quoted for this 38-40 gravity material is 2¼ to 2⅜ cents, with 2 cents available in certain quarters, an order last week for 30 cars went for 1⅞ cents. Some improvement is expected in the price of 18-22 fuel oil, which is desirable as cracking stock, but it is pointed out that some heavier residuals can be had at a much lower price for this purpose. There is very little demand for the other gravities of fuel oil. The 22-26 gravity is quoted at 37½ to 42½ cents, while the 28-30 gravity (zero) remains at 60 to 70 cents. The other prices remain the same with the usual shadings.

Several of the major companies have indicated that they are going to do something about jobbers who are offering fuel oil contracts which set a price below the lowest figure of certain publications. In general, it would appear that price cutters along the line are going to be provided with some interesting marks to shoot at.

Lubricating Oils

Bright stocks and neutrals, with more attention than ever being paid to the latter, are beginning to show a little life as the motoring season approaches.

CLASSIFIED WANTS

(Continued from Page 93)

POSITIONS WANTED

RIGHT OF WAY and CLAIM MAN experienced, desires position. University graduate. Furnish references. H. J. Conrad, 2547 West 12th Street, Oklahoma City, Okla. Phone 5-9532.

LUBRICATING ENGINEER
Specializing in the refining of oil, 18 years research and supervising experience. Qualified to handle all grades of oil and size of plants. Can furnish best of references from leading refineries in California and Oklahoma. An interview will convince you that I am fitted for the work. Write Box E-466, The Oil and Gas Journal, Tulsa, Okla.

APPRAISING AND ACCOUNTING
Want work in the petroleum industry. Can furnish best of references upon application. I will furnish the name and address of past employers who in turn will write you direct of my qualification. Write Box E-467, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM CHEMIST, M. A. & B. S. in Chemical Engineering, with 11 years' experience in refining as chief chemist and as assistant superintendent and advisor capacity to sales department, wishes to secure responsible position with reliable company. Excellent references. Write Box E-468, The Oil and Gas Journal, Tulsa, Okla.

PART TIME WORK
If you are already employed, or, full time, if you are not employed. If you have any connection with men in the oil industry you can render a service to them and at the same time earn a substantial income by soliciting subscriptions for a reliable publication. Liberal commission. Write giving age, occupation and references to Box E-475, The Oil and Gas Journal, Tulsa, Okla.

POSITIONS WANTED

DESIRE CONNECTION with producer who would be in a position to furnish 1,500 bbls. of high-gravity, Mid-Continent crude per day, also to take financial interest in Canadian refinery. Answer Box E-424, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED refinery superintendent; handle design, construction, operation, sales. Write Box E-470, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

RESEARCH LABORATORY MAN WANTED
Who is experienced in true boiling point and flash vaporization determinations and treating work.

STRUTHERS-WELLS CO.
Warren, Pa.

WANTED: Experienced man to handle oil and gas leases and take charge of Lease Exchange in new field. Must be able to furnish the best of references. State experience and reference first letter. Box 182, Williamsport, Penna.

WANTED: Salesmen and Sales Organizations to sell acreage proposition in Tioga Field. Fast selling proposition, must be reliable and furnish reference first letter. Address Tioga Realty & Development Company, Williamsport, Pa.

WANTED MEN WHO ARE NOW EMPLOYED in the oil industry to solicit subscriptions for a reliable publication. Liberal commissions. Write Box E-475, The Oil and Gas Journal, Tulsa, Okla.

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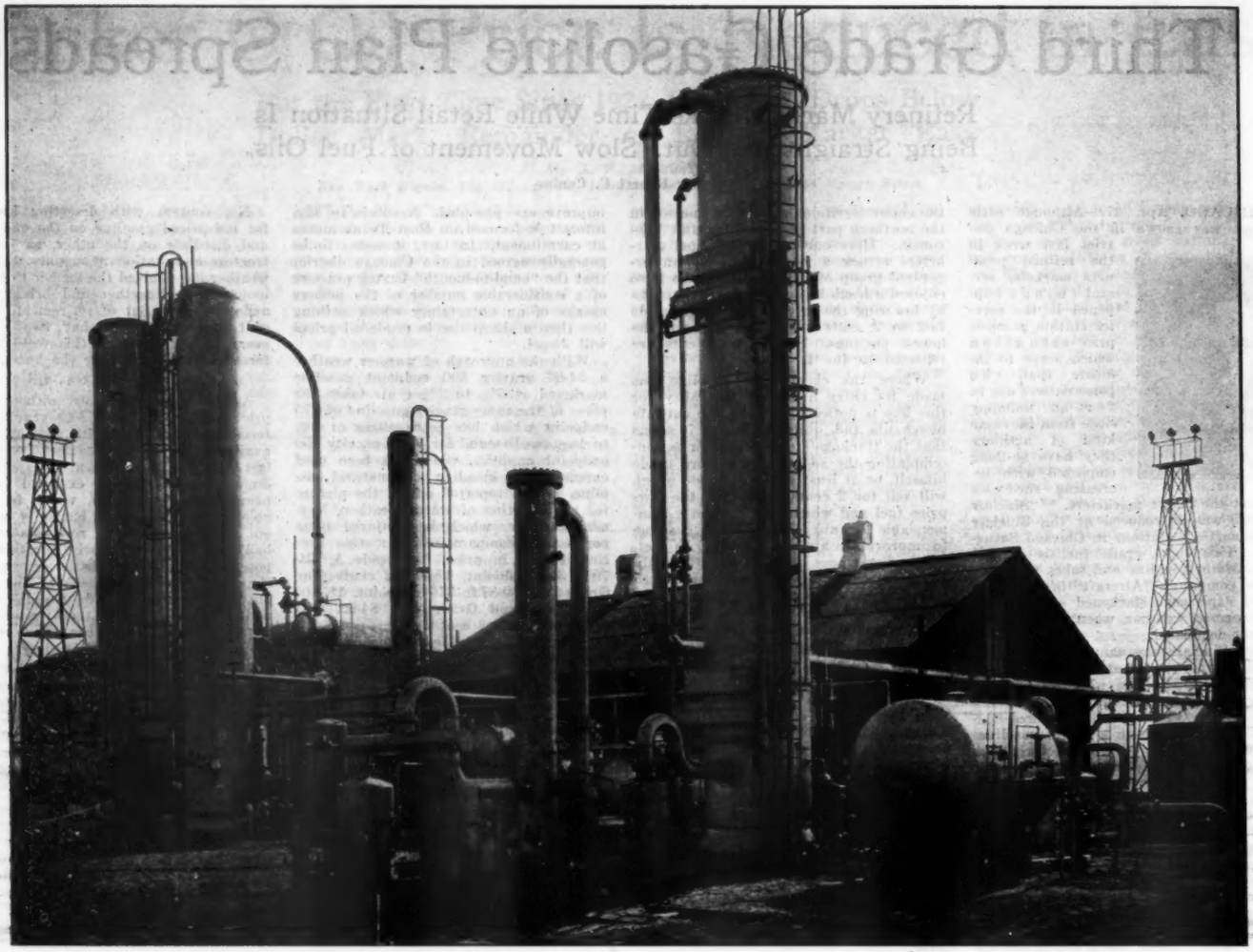

Gasoline Absorption Plants

The Foster Wheeler gasoline absorption and stabilizer plant for the Crew Levick Co. at Petty Island, N. J., was designed for an initial capacity of 4,000,000 cu. ft. of gas per day. The plant is constructed so that this capacity may be doubled by the installation of minimum additional equipment.

The progressive design of the equipment is exemplified by the use of internal coolers in the absorption tower, shown in the right foreground. These maintain moderate fat-oil temperatures which result in increased capacity of the oil to absorb gasoline fractions and, therefore, a lower oil to gas ratio for a given extraction.

A description of the above plant will be sent upon request.

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165 Broadway, New York, N. Y.
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FOSTER WHEELER

Brief Items for Petroleum Refiners

PIPE LINE CRUDE FROM TEXAS AT SHREVEPORT

SHREVEPORT, La., Apr. 27.—The 8-inch electrically welded line of the Atlas Pipe Line Co., Inc., from Shreveport to the East Texas oil fields was tied in today and is bringing the first oil from that area to Shreveport by pipe line. It connects with the Gregg County Field at a point south of Longview with pumping station at this point and also has gathering lines in the Kilgore Field to the south.

The new line which has a daily capacity of 18,000 bbls. will supply the Spartan Refining Co., Inc., a subsidiary of the Atlas company, whose refinery is located in Jewella, a suburb of Shreveport.

DIRECT SALES OF NAPHTHA

In the Turner Valley Field, a new development has been the marked increase in the direct sales of naphtha by the producing companies. Since the field opened there has always been a limited amount of buying by adjacent farmers direct from the producers; but this spring the traffic has reached unprecedented proportions. It is claimed that purchasers are trucking the naphtha to points below the Crow's Nest line in the south and as far north as Wetaskiwin. Practically all the hauling is being done by farmers who have power equipment. They buy the naphtha unrefined at the well head at 17 cents per gallon, and on this there is a government rebate of 4 cents when the product is used for agricultural purposes, making the cost 13 cents net plus hauling. The price is somewhat higher than the field prices for pipe line deliveries, and the naphtha sold direct is not subjected to temperature tests. Direct sales materially affected the pipe line deliveries in March and will probably reduce the April deliveries even more. Under Alberta legislation, operators are required to sell to farmers at the well head.

NAPHTHA TO BE TAXED

SANTA FE, N. Mex., Apr. 20.—Naphtha is subject to the state gasoline tax provided it meets the statutory requirement of volatility and tests not less than 46° Tagliaubes (Tagliabue) Baume test, the New Mexico attorney general's office has ruled. If naphtha is practically and commercially usable in internal combustion engines for generating power, it would fall under the definition of motor fuel and not within the exemption accorded kerosene oil and distillates, the opinion ruled.

ALDEN NAMED CHIEF CHEMIST

Arthur H. Alden, Jr., has been appointed chief chemist of Cities Service Refining Co. Mr. Alden is a graduate of the Massachusetts Institute of Technology, class of 1927, and began his work with the company in February of the same year. Starting in the control laboratory, he was advanced rapidly, serving as chief control chemist until May, 1930, when he was made process engineer.

WIESS SUCCEEDS MOORE

R. C. Holmes, The Texas Company, New York, chairman of the American Petroleum Institute's division of refining committee on refinery statistics and economics, has announced the appointment of H. C. Wiess, Humble Oil & Refining Co., Houston, Tex., as a member of the committee to succeed E. T. Moore, Simms Oil Co., Dallas, Tex., who has resigned on account of pressure of other committee work.

ACTION OF FREIGHT ASSOCIATION TO LOWER RATES ON SHORT HAULS

The action of the Central Freight Association in recommending substantial reductions in rail rates for short hauls may be followed by associations in other refining areas according to opinions of representative traffic managers of oil companies. The Central association following conferences with representatives of oil companies has recommended reductions in line with those requested by the shippers. These reductions will have to secure the approval of the trunk line companies before they become effective.

Following are the rates proposed by the Central Freight Association for the western trunk line territory (refined oils 16.6 bbls. per gallon):

Distance miles	Rate per 100 lbs.	Rate per gallon
20	4c	$.26
30	5½	.36
40	7	.46
50	8	.53
70	9	.59
90	10	.66
100	11½	.76
110	13	.86
120	15½	1.02
130	17	1.12
140	19½	1.29
150	21	1.42

The greatest decrease in these proposed new rates is in the shortest hauls. If made effective, it is believed that the rates will materially reduce truck and truck-train deliveries from refineries in the Chicago area. Deliveries by trucks from refineries, particularly within radii of 50 miles, have increased rapidly in recent years due largely to the prohibitive rail rates for short hauls. In some cases truck deliveries have been made up 250 miles from refineries.

The proposed action is particularly significant in view of the fact that Chicago and other western trunk line points will shortly be served with a gasoline pipe line connecting to refineries in Oklahoma and Kansas. The operators of the line have stated that they prefer to make shipments to bulk stations by rail from their pipe line terminals providing satisfactory rates are obtainable from the railroads. The alternative is the establishment of a fleet of trucks at the pipe line terminals.

Oil companies operating refineries in other areas are endeavoring to secure similar rates on their short line hauls and some minor reductions have already been announced at several points. It is proposed to include water terminals as well as pipe line terminals and refineries.

OFFER VENEZUELA OIL FOR 90-DAY SHIPMENT

NEW YORK, Apr. 27.—With major American importing companies committed to a policy of restricted imports for the second quarter of the year considerable quantities of Venezuelan crude are offered in the open market for shipment over the next three months. A number of cargos are available for shipment during this period at 70 cents per barrel, representing a decline of 5 cents from recent quotations.

There has been an insistent demand for Venezuelan crude from European buyers during recent months, but the large quantities of low priced East Texas crude now available have diverted foreign buying interests to the new flush pools in East Texas and little demand for the Venezuelan product has developed as yet.

ROAD OIL CONTRACTS

OKLAHOMA CITY, Okla., Apr. 23.—Contracts for 7,896,000 gallons of road oil were awarded by the Oklahoma Highway Commission to four companies today. The Wirt Franklin Petroleum Co. will supply 3,858,000 gallons, 2,906,000 gallons by Carter and Waters, 817,000 by the Mid-Continent Petroleum Corp. and 315,000 gallons by the Anderson-Prichard Oil Corp.

REFINERY FIRES RECORD OPEN

Copies of a five-year summary of the American Petroleum Institute Fire Record on Refining Properties is available to members of the Institute's division of refining at the New York headquarters, upon request. No charge is made for the summary.

BUILD ARGENTINE REFINERY

NEW YORK, Apr. 27.—The Argentine government has granted permission to a Buenos Aires firm to construct and operate a 10,000-bbl. refinery in that city.

The new refinery will import the bulk of its crude requirements and will produce principally gasoline, kerosene and fuel oil.

KENDALL TO INCREASE BRIGHT STOCK OUTPUT

BRADFORD, Pa., Apr. 28.—The Kendall Refining Co. will add 70 tons of refrigeration to its Bradford, Pa., refinery and will also build a tube still rerun unit. The refrigerating equipment will be supplied by the Yorke Ice Machine Co. and the still will be built by Alco Products, Inc. In addition, a Carpenter chiller will be installed for the production of low cold test bright stocks. The total cost of the new work is estimated near $200,000.

INCREASE MOTOR OIL SALES

NEW YORK, Apr. 28.—The marketing division of Crew Levick Co., Cities Service subsidiary, finished its annual March Motor Oil Campaign with the finest record in the history of the company, it is announced here, the total gallonage sold and delivered during the month aggregating approximately 630,000 gallons, an increase of 50 per cent over the best previous record.

The Allentown division of the company won the A. M. McBurney Motor Oil Cup, offered for the first time in this campaign.

FORM NEW COMPANY

The Standard Oil Co. of California and the General Foods Corp. expect to form a company to be known as Pacific Frosted Foods, Inc., organized for the commercial development of the Birdseye quick-freezing patents in the West. Standard Oil Co. of California is interested because of its management control of the Pacific Public Service Co., which already has extensive interests in refrigeration. The company will act primarily as a coordinating unit in making the Birdseye process available to the western perishable foods industry.

TO BUILD STABILIZING UNIT

The White Star Refining Co. of Detroit, plans the erection of a $50,000 gasoline stabilizing unit at its Trenton, Mich., plant. Foster and Wheeler, of New York City, will build the plant.

OPERATE EAST TEXAS REFINERY AT LONGVIEW

The East Texas Refining Co. has started operating its second refinery in the new East Texas area. This plant is located at Longview and the initial runs approximate 6,000 bbls. per day. This is expected to be increased within the next 30 days and when completed will have a skimming capacity of 10,000 bbls. daily. The company is also operating a 6,000-bbl. plant in Henderson, having completed construction there a little more than a month ago.

Part of the crude is being supplied by the company's own wells but some is being purchased from producers. This is received into the plant in tank cars and accommodations have been built for 72 cars. The products of the refinery include gasoline, kerosene, gas oil and fuel oils and these will be distributed in the north central and southeastern states principally.

SAFETY COUNCIL GULF COAST TO MEET MAY 8

HOUSTON, Tex., Apr. 28.—As a part of the Southwestern Safety Conference to be held at Houston, May 8, the Gulf Coast Chapter of the Petroleum Safety Council will hold its May meeting at luncheon at noon that day.

The program will include a talk by H. J. Larsen, of Wilson Products, Inc., on "Eye Protection"; D. J. Wallace, of the Mid-Continent Oil and Gas Association, Tulsa, will outline the proposed safety program for the coming year, and H. N. Blakeslee, safety director, American Petroleum Institute, Chicago.

INVESTIGATE COST OF RESEARCH ON SULPHUR

J. Bennett Hill, Atlantic Refining Co., Philadelphia, Pa., has been appointed chairman of a subcommittee of the American Petroleum Institute's Division of Refining Committee on Testing Methods and Specifications to consider a program and estimated cost of research of sulphur in gasoline.

The group will co-operate with a similar subcommittee of Technical Committee A of the American Society for Testing Materials and Committee D-2 on Petroleum Products and Lubricants in drawing up the research program and estimating costs. The advisability of raising the sulphur limit of gasoline has been discussed widely for some time.

OPEN ENLARGED TERMINAL

NEW YORK, Apr. 27.—Deutsch-Amerikanische Petroleum-Gesellschaft has opened its new and enlarged storage and bulk terminal at Stettin, Germany. Storage capacity at the Stettin terminal, which is on the Baltic, has been increased from 16,000 to 36,000 tons, and the entrance to the harbor has been deepened to permit the docking of tankers up to 16,000 tons alongside the company's new dock.

The first large tanker to use the terminal will be the company's recently completed tanker "Harry G. Seidel," and other tankers will be added to the fleet. The Stettin terminal will supply petroleum products to the entire east German market, including Berlin.

GULF BUILDING STORAGE

DENBO, Pa., Apr. 21.—Facilities for storage of 500,000 gallons of gasoline will be provided in connection with a bulk distributing plant to be erected here by the Gulf Refining Co. to serve Fayette, Washington and Greene Counties.

Manufacture of Natural Gasoline

Residue Gas Sales to Carbon Black Plants Show Increase in 1930

Sales of residue gas to carbon black producers may be expected to show a decline compared to the volume delivered during 1930 if the recent report of excess stocks of carbon black, made by the United States Department of Commerce may be taken as an influence in holding down production this year.

Carbon black production increased to a new high level in 1930 when the total output amounted to 379,942,000 pounds, an increase over 1929 of 13,500,000 pounds, or 3.7 per cent, according to the United States Bureau of Mines, Department of Commerce. This increase, coming after a gain in output in 1929 of 47 per cent, resulted in an oversupply with the result that stocks continued to mount and prices to fall.

Total sales of carbon black to domestic and foreign buyers in 1930 amounted to 251,539,000 pounds, a decline from the previous year of 32,267,000 pounds, or 11 per cent. This decline was reflected in domestic sales and exports, both decreasing in about the same ratio.

Stocks, already high as the year opened, increased rapidly and on December 31, 1930, amounted to 259,245,000 pounds, or nearly double the total on hand January 1. A comparison of total deliveries in 1930, 251,539,000 pounds, with stocks indicates that the supply on hand more than equals the 1930 demand.

As already stated the oversupply of carbon black in 1930 was reflected in prices, which fell off consistently. The average value per pound as reported by the producers for 1930 was 3.91 cents. This represents the lowest price recorded.

The estimated quantity of natural gas burned for the production of carbon black in 1930 amounted to 266,471,000,000 feet, a slight increase over 1929.

The year witnessed a further gain in the standing of Texas as a carbon black producer and a corresponding loss in the importance of Louisiana. Production in Texas in 1930 amounted to 271,749,000 pounds, or 72 per cent of the total. The center of production in Texas was the Panhandle Field where more than 94 per cent of the total output for the State in 1930 was produced. The chief reason for the decline of production in Louisiana is the competition offered by long natural gas lines such as those from Monroe-Richland to St. Louis, New Orleans and Atlanta. With carbon black selling in some cases at 3 cents per pound and the yield at less than 1½ pounds per 1,000 feet of gas, a profit is not possible unless the gas can be purchased under 2 cents. Gas at this low price is only available in a few localities, like the Panhandle, where the supply greatly exceeds the demand of industrial and domestic users.

The other carbon black producing states exclusive of Texas and Louisiana are Montana, Oklahoma, Utah, West Virginia and Wyoming. The output of these states increased in 1930, but still constitutes an almost negligible factor in the industry.

The discovery that carbon black could be used as a reinforcing agent in rubber was made in 1915 and since that time this use has been the dominating factor in the trade. The approximate distribution of carbon black sales in 1930 was as follows: To rubber companies, 128,572,000 pounds, or 77 per cent; to ink companies, 19,220,000 pounds, or 11 per cent; to paint companies, 11,922,000 pounds, or 7 per cent; for miscellaneous purposes, 7,565,000 pounds, or 5 per cent. These data indicate an increase in the relative importance of the use in rubber at the expense of consumption by the ink and paint industries.

DILUTED BUTANE GAS UNITS MAY BE BUILT AND OPERATED AT LOW COST

Liquefied gas plants and air-gas plants have passed beyond the experimental stage and are now being installed in a great number of small towns and villages in all parts of the country. Their consumption of special fuels is beginning to take an appreciable quantity of the output of natural gasoline plants engaged in their manufacture. At a recent meeting of the American Gas Association, E. L. Fisher, engineer for the United Power & Light Co. of Davenport, Iowa, explained in detail the construction and operation of one of the company's diluted butane plants. This plant is located at Cleveland, Tenn., and supplies a town of 9,000 persons.

In describing the equipment installed Mr. Fisher said:

"In choosing a method of distribution we decided on an intermediate pressure system of approximately 5 pounds at the plant and laid out the piping so that at the estimated peak load we would have 1 pound pressure at the most remote point. We decided that since there would be no condensation in the mains we would lay the mains as shallow as traffic conditions would allow and pay no attention to the matter of drip pots or grade of the line. We were tempted to make the pipe sizes strictly on the basis of load carried and pressure drops without regard to minimum limit but we did not have quite nerve enough to try it as some of the mains would be as small as one-half inch. We played safe and decided on 2 inches as the minimum sizes with three-quarters of an inch as the standard service connection. Of course, each service has its own service regulator which is set for a discharge pressure of 4 inches to 6 inches of water at which pressure the gas is metered and burned.

"The plant consisted of the major items as shown here. One 8x40 standard butane storage tank, three 11x60 high-pressure gas storage tanks, one No. 5 Kemp mixing valve, one 3-inch Selas mixing valve, two Ingersoll-Rand 7x7 type ER-1 compressors, one 15-horsepower 220-volt three-phase motor, one Waukesha gas engine of 22-horsepower net rating, and one 20'x20' brick building. This does not include the necessary regulators, valves, piping, electric control equipment, etc., not listed. The total cost of the plant equipment and buildings was $24,394.68, real estate and railway siding $5,879, or a total of $30,273.68."

The total cost of mains and meters for 650 customers was estimated at $49,649, or an average per customer of $76.50.

At first, Mr. Fisher said, the plant was not fully automatic and the first trouble of importance was found to be its excessive use of butane. He continued:

"A careful investigation revealed that a large part of this was being wasted out the air intake to the mixing machines when they were not in operation. These are equipped with check valves which are supposed to prevent this, but careful investigation proved to our satisfaction that they could not be made to hold tightly probably on account of the extremely low differential pressure on the check.

"To prevent this loss we decided to install automatic valves in the butane vapor lines ahead of the mixing valves arranged to close when the compressor shut down and open when it started up. We tried several of these valves before we found one which could be depended upon to hold the butane. Space will not permit a recital of all of the difficulties and petty failures of this and that which occurred. These things, however, prevented full automatic operation of the plant until October of 1930. Since that time, however, the plant has been operating successfully on a full automatic basis and requires only about one-half hour of attention per day for the purpose of inspection, oiling, etc., and the reading of various meters and gauges so the data for the daily report may be had.

"Since that time the whole payroll of the Cleveland Gas Co. contains only three names. One man is employed only part time helping to install a service or stove or some unusual construction or repair job. The other two consist of a man who is directly in charge of the property and an office girl who takes care of floor sales and keeps the customer accounts. The general books are kept at Chattanooga by the accounting department of the Chattanooga Gas Co."

Another plant was then briefly described and is located at Maryville, Mo., a town of 5,200 population. This was built using the same general design and equipment as that at Cleveland except that it contains a single set of equipment. Dual equipment was installed in the former plant because it was considered as a semiexperiment and now that all difficulties have been corrected, the future installations need only to include the essential parts.

In pointing out the small amount of attention needed to keep the plant in operation, Mr. Fisher said:

"The automatic control on this plant is installed to operate on the working storage tank only. When it becomes necessary to replenish the gas reserve storage in the high pressure tank, a man visits the plant, changes the valves to connect the discharge of the compressor to the reserve storage tank, turns a switch which takes the compressor off of the pressure switch but still leaves the B.t.u. recorder in control. The compressor will then operate until it is manually shut down unless the mixture for some reason becomes too lean or too rich so that the B.t.u. recorder automatically shuts it

(Continued on Page 108)

LARGE ATTENDANCE AT METER SHORT COURSE

More than 400 operators attended the eighth annual Southwestern Gas Measurement short course held at the college of engineering of the University of Oklahoma at Norman, April 21 to 23. Regular classes were held during the sessions and 16 meter manufacturers sent representatives and had displays in the class rooms to facilitate a complete study of all phases of gas measurement. The newer developments in the mechanism of the meters were shown and the display included meters ranging from the smallest to the large meters used on high pressure mains.

SUPERVISED BY CAMPBELL

Following the explanation of the operation of a new high pressure absorption unit in North Louisiana on this page April 23, it was stated the plant was built by Stearns-Roger Manufacturing Co. for the J. A. Campbell Co. This should have stated that the plant was built by Stearns-Roger Manufacturing Co. under the supervision of the J. A. Campbell Co.

TO APPROVE REID METHOD

The United States Bureau of Explosives is expected to approve the Reid vapor pressure method of test as originally outlined by the Gasoline Association of America and approved by the A.S.T.M. on May 4 when a hearing will be held to consider any remaining objections.

Seeking Co-operation In Motor Design to Lessen Vapor Locking

Recognition of the statement made by natural gasoline manufacturers as a result of research work done over a period of four years, that a relocation of the gasoline feed line and the redesign of the carburetor system would provide for the use of motor fuels of lower distillation range and thus in turn provide for easier starting and speedier acceleration was shown in a resolution made by the directors of the American Petroleum Institute to seek the co-operation of the National Automobile Chamber of Commerce and the Society of Automotive Engineers in effecting these changes in future motor car designs.

The text of the resolution was also influenced by the findings of Dr. O. C. Bridgeman of the Bureau of Standards who said in a paper delivered at the St. Louis meeting of the A.P.I. refining division that "vapor locking" could be overcome by locating the fuel lines outside the frame channel, by insulating or relocating the feed pumps or by other means which would prevent the transfer of the exhaust heat from the exhaust line to the fuel line.

NEW RULES FOR LOADING LIQUEFIED GAS IN CARS

At the request of the Shell Petroleum Corp. the Bureau of Explosives has removed an inconsistency that has appeared in the regulations governing the loading of liquefied gases in tank cars. The modified table permits a greater number of gallons of the heavier grades than permitted under the old table and following is an abbreviated table showing the relation between the specific gravity of the product and the allowable filling density when using water as unity.

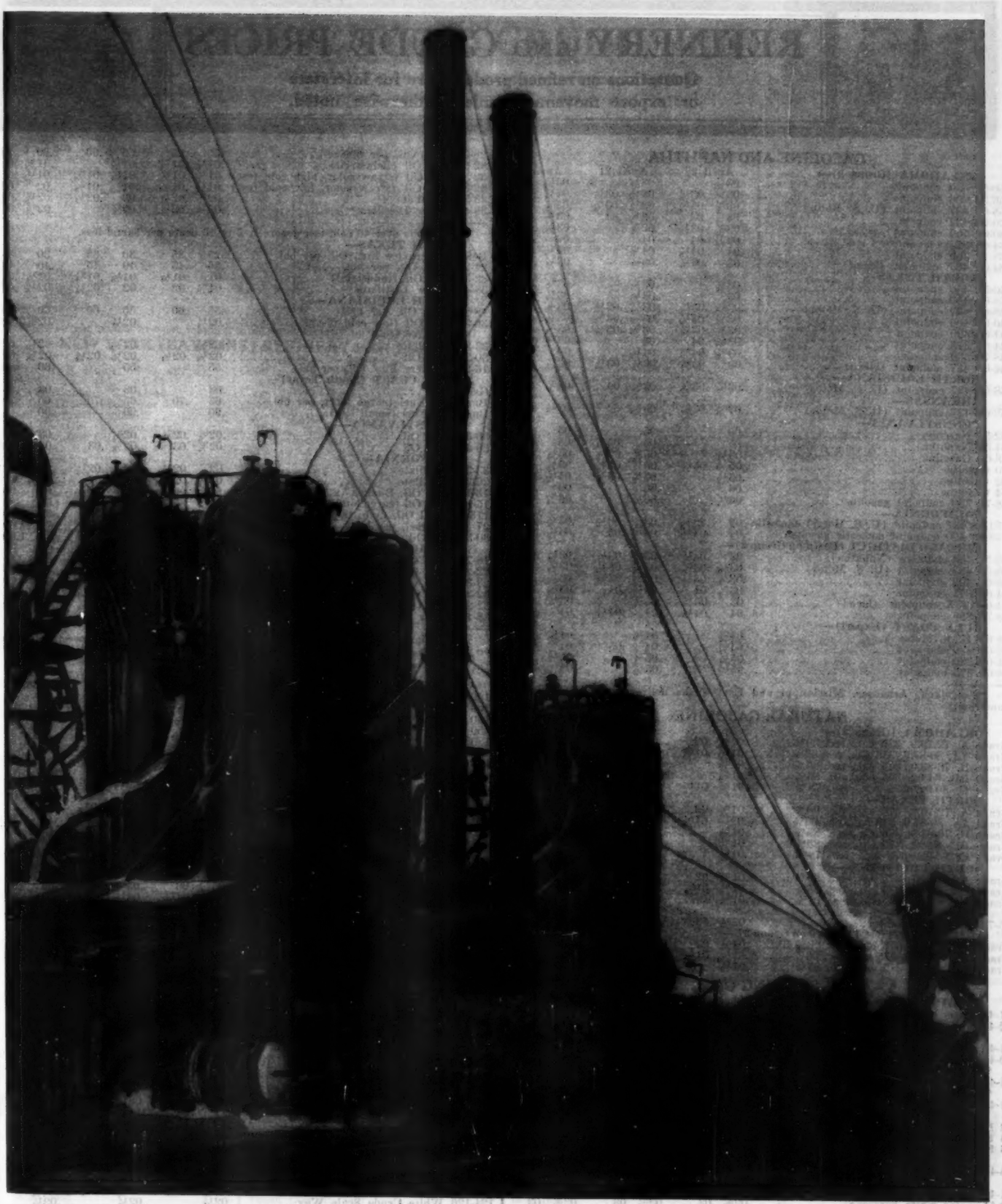
Liquefied petroleum gas specific gravity of the liquid material at 60° F.	Maximum permitted filling density per cent
0.500	45.50
0.501	45.61
0.502	45.72
0.503	45.83
0.504	45.94
0.505	46.05
0.506	46.16
0.507	46.27
0.508	46.38
0.509	46.49
0.510	46.60

This table is continued to include specific gravities to and including .623 and the accompanying density may be calculated by adding .11 for each increase of one-tenth of 1 per cent in the gravity.

NEW BUTANE PLANTS FOR NORTHWESTERN STATES

Butane gas plants are increasing in number throughout the northwestern states and most recently to be announced are the installations at Cottage Grove, Ore.; Shelton, Wash., and Port Townsend, Wash., where service will start during the next week. A plant under construction at Coquille, Ore., will be completed early in May.

These plants form a part of a network of gas utilities being operated under the Natural Gas Corp. of Oregon, and the Natural Gas Corp. of Washington in the respective states and each is affiliated with the Pacific Public Service Co., a subsidiary of the Standard Oil Co. of California. The latter company will furnish the liquefied fuel manufactured at its natural gasoline plants for use in these plants.



FLAT contract price for cracking units constructed to licensor's design for licensee's account.

ARTHUR G. McKEE & COMPANY
Engineers and Contractors 2422 Euclid Avenue, Cleveland
120 Broadway, New York ◆ Bush, House Aldwych, W. C. 2, London
Associated with
PETROLEUM ENGINEERING, INC. Tulsa, Oklahoma Dallas, Texas
THE WHESSOE FOUNDRY & ENGINEERING CO., Ltd. Darlington, England 25 Victoria St., S. W. 1, London

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	April 28		April 21		April 14	
50-52 450 endpoint	.03⅛		.03¼		.03¼	.03½
56-58 450 endpoint	.03	.03¼	.03⅛	.03¼	.03¼	.03½
58-60 437 endpoint (U. S. Motor)	.03¼	.03⅜	.03¼	.03¾	.03½	.04
60-62 437 endpoint	.03¼	.03⅜	.03½	.04	.03½	.04
60-62 400 endpoint	.03⅜	.03½	.03½		.03⅝	.04
64-66 375 endpoint	.03¾	.04	.04		.04	.04¼
68-70 360 endpoint	.04	.04⅛	.04⅛		.04⅛	.04¼
64-66 437 endpoint (blend)	.03	.03¼	.03¼		.03¼	.03½
NORTH TEXAS—						
50-52 450 endpoint	.03⅛		.03¼		.03¼	.03½
58-60 450 endpoint	.03		.03½		.03½	
58-60 437 endpoint (U. S. Motor)	.03½	.03¼	.03¼	.03½	.03⅜	.03½
60-62 400 endpoint	.03¼	.03½	.03½	.03⅝	.03½	.04
64-66 390 endpoint	.03½	.03¾	.03⅜	.03¾	.03¾	.04
64-66 375 endpoint	.03⅝	.04	.04		.03⅞	.04
68-70 360 endpoint	.03⅞	.04⅛	.04⅛		.04	.04¼
64-66 437 endpoint (blend)	.03	.03¼	.03¼	.03½	.03¼	.03½
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.03⅝	.03⅞	.03¾	.04	.03¾	.04
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.03⅝	.03¾	.03⅝	.04	.03⅝	.04
PENNSYLVANIA—						
52-54 Naphtha	.05		.05		.05	
54-56 Naphtha	.05		.05	.05¼	.05	.05¼
58-60 Gasoline	.05¼		.05¼	.05½	.05¼	.05½
60 Gasoline	.05¼	.05½	.05¼	.05¾	.05½	.05¾
62 Gasoline	.05½		.05½	.05¾	.05½	.06
64 Gasoline	.06		.06		.06	.06½
68-70 350 endpoint gasoline	.06½		.06½		.06¾	.07
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.03	.03½	.03	.03½	.03½	.04½
†58-60 400 endpoint domestic gasoline	.04	.04½	.04½	.05	.04½	.05
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.03	.03¼	.03	.03¼	.03¼	.03½
58-60 437 endpoint (U. S. Motor)	.03⅛	.03⅜	.03¼	.03½	.03⅜	
60-62 400 endpoint	.03¼	.03½	.03½	.03⅝	.03¼	
64-66 375 endpoint	.03¾	.04	.03¾	.04	.03⅞	.04
64-66 437 endpoint (blend)	.03	.03¼	.03¼		.03¼	
68-70 360 endpoint	.04	.04⅛	.04	.04¼	.04	
GULF COAST (Export)—						
58-60 U. S. Motor	.04½		.04½		.04½	
60-62 400 endpoint	.04¾		.04¾	.05	.04¾	.05
61-63 390 endpoint	.05¼		.05¼		.05¼	
64-66 375 endpoint	.05½		.05½		.05½	

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	April 28		April 21		April 14	
Grade A, 72-79.9, 375 e.p., rec. 90%	.01¾	.02	.02		.02¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01½	.01⅝	.01⅝	.01¾	.02⅛	
Grade B, 76-83.9, 375 e.p., rec. 85%	.01½		.01⅝		.02	
Grade BB, 84-92, 375 e.p., rec. 85%	.01½		.01⅝		.01⅞	
Grade C, 80-92, 375 e.p., rec. 78%	.01⅝	.01½	.01½		.01¾	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.01¾	.02	.02		.02¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01½	.01⅝	.01⅝		.02⅛	
Grade B, 76-83.9, 375 e.p., rec. 85%	.01½		.01⅝		.02	
Grade BB, 84-92, 375 e.p., rec. 85%	.01½		.01⅝		.01¾	
Grade C, 80-92, 375 e.p., rec. 78%	.01½		.01½		.01¾	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.01¾	.02	.02⅛		.02¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅝	.01¾	.01⅝	.01¾	.02⅛	
Grade C, 80-92, 375 e.p., rec. 78%	.01⅝		.01¾		.02	
CALIFORNIA—						
75-78 375-390 endpoint	.02½	.03	.03	.04	.03¼	.04⅛
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.01¾	.02	.02		.02¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01½	.01⅝	.01⅝		.02⅛	
Grade BB, 84-92, 375 e.p., rec. 85%	.01½		.01⅝		.01¾	

BURNING OIL

OKLAHOMA (Group 3)—	April 28		April 21		April 14	
41-43 water white kerosene	.02½	.02¾	.02½	.02¾	.02⅝	.02⅞
42-44 water white kerosene	.02¾	.03	.02¾	.03	.02¾	.03⅛
NORTH TEXAS—						
41-43 water white kerosene	.02½	.02¾	.02½	.02¾	.02½	.03
40-41 water white kerosene	.02¼	.02½	.02¼	.02½	.02⅝	.02½
*NORTH LOUISIANA—						
41-43 water white kerosene	.03		.03		.03	
*ARKANSAS—						
41-43 water white kerosene	.03	.03⅛	.03	.03⅛	.03	.03¼
PENNSYLVANIA—						
43 Kerosene prime white	.04⅝		.04½		.04½	
45 Kerosene water white	.04⅝	.04½	.04½		.04½	.04⅝
46 Kerosene water white	.04⅝	.05	.04⅝	.05	.04⅝	.05
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.04½	.04	.04½	.04¼	.04¾
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.02½	.02¾	.02½	.02¾	.02½	.02¾
42-44 water white kerosene	.02⅝	.03	.02¾	.03	.02¾	.03
GULF COAST (Export)—						
41-43 prime white	.04¼		.04¼		.04¼	
44 water white	.05¼		.05¼		.05¼	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	April 28		April 21		April 14	
Below 18 gravity Fuel Oil, per bbl.	.35	.40	.35	.40	.35	.40
18-22 Fuel Oil, per bbl.	.37½	.42½	.37½	.42½	.37½	.42½
20-22 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
22-26 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.55
24-26 Fuel Oil, per bbl.	.47½	.50	.47½	.50	.50	.60
26-30 Fuel Oil, per bbl.	.50	.55	.50	.55	.55	.60
28-30 Fuel Oil, per bbl.	.55	.65	.55	.65	.60	.70
32-36 Gas Oil (industrial)	.01½	.01¼	.01½		.01⅜	.01½
32-36 Gas Oil (straw color, high cold test)	.01½	.01⅜	.01¼	.01⅜	.01½	.01⅝
32-36 Gas Oil (straw color, low cold test)	.01½	.01⅝	.01½	.01⅝	.02	.02⅛
36-38 Distillate	.02	.02¼	.02	.02¼	.02¼	.02⅛
38-40 Straw Distillate	.02⅛	.02¼	.02¼		.02¼	.02⅜

*Fuel oils over 40 cold test generally 5 to 10 cents per barrel less.

NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.25	.35	.30	.35	.30	.35
24-26 Fuel Oil, per bbl.	.35	.45	.40	.45	.40	.45
32-36 Gas Oil (industrial)	.01	.01¼	.01⅛	.01¼	.01¼	.01½
38-40 Straw Distillate	.01⅞	.02	.02	.02¼	.02⅛	.02¼
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.55	.60	.55	.60	.60	.70
30-32 Gas Oil (low cold test)	.02¼		.02¼		.02⅜	.02½
*ARKANSAS—						
33-36 Distillate	.02½		.02½		.02½	.02⅝
30-32 Gas Oil	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
16-22 Refinery Fuel Oil, per bbl.	.55		.55		.60	.65
GULF COAST (South Texas)—						
Gas Oil	.03		.03		.03	.03¼
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.65	.70
Bunker C Fuel (small lots)	.90		.90		.90	
PENNSYLVANIA—						
30-34 Fuel Oil	.02¾	.02⅞	.02⅝		.03	
36-40 Fuel Oil	.02¾	.03	.02⅞	.03	.03	.03¼
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.90	.60	.90	.60	.90
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.85	.55	.85	.55	.85
†15-19 Fuel Oil, f.o.b. tank cars	.30	.70	.30	.70	.30	.70
27 plus Diesel, per bbl.	.70	.95	.70	.95	.75	1.00
30-34 Gas Oil	.70	.95	.70	.95	.75	1.00
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per. bbl.	.35	.40	.35	.40	.35	.40
22-26 Fuel Oil, per bbl.	.37½	.42½	.47½	.55	.47½	.55
28-30 Fuel Oil, per bbl. (zero)	.60	.70	.60	.70	.60	.70
32-36 Gas Oil (industrial)	.01½	.01⅜	.01⅛	.01¼	.01¼	.01½
32-36 Gas Oil (zero)	.01½	.01¾	.02	.02¼	.02	.02⅛
38-40 Straw Distillate	.02⅛	.02¼	.02¼	.02⅜	.02⅛	.02¼

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	April 28		April 21		April 14	
100 vis., 2 color, 20-25 cold test	.05		.05		.05	
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 4 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600, steam refined, light green	.05	.06	.05	.06	.05	.06
600, steam refined, dark green	.03½	.04½	.03½	.04½	.03½	.04½
190-200 vis., D color, Bright Stocks	.20		.20		.20	
150-160 vis., D color, Bright Stocks 0-10 c.t.	.16	.17	.16	.17	.16	.17
150-160 vis., D color, Bright Stocks 10-25 c.t.	.15	.16	.15	.16	.15	.16
150-160 vis., D color, Bright Stocks 25-40 c.t.	.14½	.15½	.14½	.15½	.14½	.15½
150-160 vis., E color, Bright Stocks	.14	.15	.14	.15	.14	.15
Waxes:						
124-126 White Crude Scale Wax	.01¾	.02	.01¾	.02	.01⅞	.02

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½		.05½		.05½	.06
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05½		.05½		.05½	
150, 3 color	.16¾	.17	.17½	.18	.18	.18½
180, 3 color	.18½	.20½	.19	.20	.19	.20½
200, 3 color	.21½	.22½	.22	.22¼	.22	.22½
220, 3 color	.24½	.26½	.24½	.27	.24½	.27
600, steam refined	.08¼	.08½	.08¼	.08¾	.08¼	.08¾
650, steam refined	.11	.12½	.11½	.12	.12	.12½
600, Pennsylvania Flash	.12	.14	.12	.14	.12	.14
630, Pennsylvania Flash	.17¾		.18		.18	
600, E filtered	.11½	.13	.11½	.12½	.12	.13
600, D filtered, Oil City	.17		.17		.17	
Pennsylvania Bright Stocks below 35 c.t.	.18	.19	.18	.18½	.18½	.19
Pennsylvania Bright Stocks above 35 c.t.	.17½		.17¾		.18	
*122-124 White Crude Scale Wax	.02½	.02¼	.02½	.02¼	.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06	.06¼	.06	.06¼	.06	.06¼
200 vis., 3 color, pale oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
300 vis., 3 color, pale oil	.09½	.09¾	.09½	.09¾	.09½	.09¾
500 vis., 3½ color, pale oil	.10¾	.11	.10¾	.11	.10¾	.11
750 vis., 3½ color, pale oil	.12¼	.12½	.12¼	.12½	.12¼	.12½
1,200 vis., 3½ color, pale oil	.14¾	.15	.14¾	.15	.14¾	.15
2,000 vis., 4 color, pale oil	.15¾	.16	.15¾	.16	.15¾	.16
200 vis., 5-6 color, red oil	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09
500 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼
750 vis., 5-6 color, red oil	.11	.11¾	.11	.11¾	.11	.11¾

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

1,200 vis., 5-6 color, red oil	.13¾	.14	.13¾	.14	.13¾	.14
2,000 vis., 6 plus color	.15¾	.16	.15¾	.16	.15¾	.16
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.09½	.10	.09½	.10	.09½	.10
300 vis., 5-6 color	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
400 vis., 5-6 color	.11	.12	.11	.12	.11	.12
500 vis., 4½-5 color	.12¼	.13	.12¼	.13	.12¼	.13
500 vis., 5-6½ color	.12	.12¾	.12	.12¾	.12	.12¾
600 vis., 6½ plus color	.13	.14	.13	.14	.13	.14

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	April 28		April 21		April 14	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.06⅜	.07½	.06⅜	.07½	.06⅜	.08
Kerosene, water white, 41-43	.05¾	.06	.05¾	.06	.05¾	.06
*Fuel Oil, Bunker "C," 41-43	.95		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	1.75		1.75		1.75	
Gas Oil, 28 gravity plus	.04¼	.05¼	.04¼	.05¼	.04¼	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.03		.03	
125-127 a.m.p., per lb.	.03⅛		.03⅛		.03⅛	
130-132 a.m.p., per lb.	.03⅝		.03⅝		.03⅝	
133-135 a.m.p., per lb.	.04¼		.04¼		.04⅜	
135-137 a.m.p., per lb.	.04⅝		.04⅝		.04¾	
Petrolatum in barrels in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03		.03		.03	
Extra Amber	.03¼		.03¼		.03¼	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents a barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	April 28		April 21		April 14	
600, steam refined cylinder stocks, in bbls.	.16	.16¼	.16¼		.16¼	
635, steam refined	.16½	.17	.17		.17	
650, steam refined	.19½	.20	.20		.20	
600, Pennsylvania Flash	.20	.21	.20	.21	.21	
630, Pennsylvania Flash	.26		.26		.26	
600, Warren E	.20		.20		.20	
600, Oil City E	.19		.19		.19	
Light 140-150 Bright Stocks	.25	.26	.26½		.26	
Dark 140-150 Bright Stocks	.23½	.24	.24½		.24	

LOS ANGELES EXPORT PRICES

	April 28		April 21		April 14	
Kerosene, water white	.04¼	.05	.04½	.05½	.04½	.05¼
*U. S. Motor Gasoline, 53-55, 437 e.p.	.03½	.04¼	.04	.04⅝	.04	.05
*58-62, 400 endpoint gasoline	.04	.05	.04½	.05½	.04½	.05½

*For coastwise shipment.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Rusk County, Tex.* (Apr. 6, 1931) ....$ .25
Corsicana heavy (Apr. 23, 1931)† ..... .38
Other fields .....See gravity table

*Posted by Panola Pipe Line Co. For Humble Oil & Refining Co. and Magnolia Petroleum Co. posted prices on East Texas, see gravity table. †Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties..See gravity table

WEST TEXAS

Iatan* .....Same as North Texas
Crane-Upton-Crockett, Howard and Glasscock and Ector (Apr. 21, 1931)†.$ .30
Winkler and Pecos, Tex. (Apr. 21, 1931)† .35
Lea County, N. Mex. (Apr. 21, 1931) .. .325

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Mar. 10, 1931).$ .45
Carterville, Sarepta and Cotton Valley, below 36 gravity .....See gravity table
March 10, 1931 ..... .45
Urania (Oct. 30, 1930) ..... .75
Calion, heavy (Mar. 10, 1931) ..... .45
East El Dorado (Mar. 10, 1931) ..... .45
Other fields .....See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co.; Calion posted by Gulf Refining Co.

GULF COAST

Grade A (April 21)* .....$ .70
Grade B, 35° and upward—See gravity table
Jennings, La. (Apr. 21, 1931)† ..... .75
Refugio, light .....Same as Grade B
Refugio, heavy (Jan. 14)* ..... .69
Markham (Mar. 10, 1931)† ..... .50
High Island (Apr. 21, 1931)† ..... .65
Hankamer (Apr. 21, 1931)† ..... .65

*Humble Oil & Refining Co. †Gulf Refining Co. of Louisiana. ‡Texas Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

lles (Mar. 7, 1931):
33 gravity and above .....$ .73
Under 33 gravity ..... .50
Fort Collins (Mar. 5, 1931) ..... .53
Florence (Mar. 5, 1931) ..... .47
Wellington (Mar. 5, 1931) ..... .48
Dutton Creek (Oct. 28, 1930) 1.01
Rock Creek, Wyo. (Mar. 5, 1931) ..... .66
Salt Creek .....See gravity table
Big Muddy (Mar. 5, 1931) ..... .65
Grass Creek, heavy (July 27, 1928) ..... .90
Grass Creek, light (Mar. 5, 1931) ..... .90
Elk Basin (Mar. 5, 1931) ..... .90
Lance Creek (Mar. 5, 1931) ..... .98
Poison Spider (Mar. 5, 1931) ..... .70
Notches (Mar. 14, 1927) ..... .65
Hudson (Mar. 5, 1931) ..... .35
Lander (Mar. 5, 1931) ..... .49
Rex Lake (Feb. 22, 1930) 1.10
Osage (Apr. 15, 1931) ..... .98
Lost Soldier (Mar. 5, 1931) ..... .85
Hamilton Dome (Mar. 14, 1927) ..... .85
Greybull (Oct. 28, 1930) 1.25
Torchlight (Oct. 28, 1930) 1.25
Cat Creek (Mar. 5, 1931) ..... .90
Pondera (Mont.) (Mar. 12, 1931) 1.00
Sunburst (Mont. (Mar. 12, 1931) 1.10
Hogback (N. Mex.) (Mar. 5, 1931) 1.05
Artesia (N. Mex.) (Mar. 10, 1931) ..... .40
Lea County, N. Mex. (Apr. 21, 1931) .. .325
Border, Mont. 1.55
Red Coulee, Alberta 1.55

Note—Salt Creek, Cat Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin, Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Ohio Oil Co. ceased posting Artesia on March 5, 1931. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by the Continental Oil Co. Osage posted by Arro Oil & Refining Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Apr. 21, 1931)* .....$ .53
Luling (Apr. 23, 1931)† ..... .38
Mirando (Apr. 21, 1931)* ..... .60
Pettus (Apr. 21, 1931)* ..... .75
Salt Flat (Apr. 21, 1931)* ..... .53
Thrall‡ .....
Lytton Springs (Lockhart) See gravity table
Dobrowolski (Oct. 25, 1930)‖ .....
Same as Mid-Continent gravity scale up to and including 38-38.9° at 1.01
Somerset (Oct. 25, 1929)¶ .....
Same as Mid-Continent gravity scale up to and including 38-38.9° at 1.01

*Posted by Humble Oil & Refining Co. †Magnolia Petroleum Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ‖Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ¶Pioneer Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective April 23, 1931)

Penna Grade Oil in National Transit Lines (Pennsylvania) $1.75
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania) 1.70
Pennsylvania Grade Oil in Southwest Pennsylvania Lines (Apr. 27, 1931).. 1.60
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) 1.50
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930) 1.25
Corning Grade Oil in Buckeye Pipe Line Co.'s Line (Mar. 11, 1931) ..... .80
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) 1.10
Wayne District Oil in Cumberland Pipe Lines 1.17

(Continued on Page 102)

CRUDE OIL GRAVITY TABLE

Gravity—	Oklahoma, Kansas, East Central Texas 1	Hanger, North Texas and Cooke County, Texas 2	East Texas 3	North Louisiana and Arkansas 4	Carson and Hutchinson Counties, Texas 5	Gray County, Texas 6	Grade B Gulf Coast and Refugio, Texas 7	Salt Creek, Wyoming 8	Stephens, Arkansas 9
Below 25	....	....	....	....	....	....	.60	....	....
25 to 25.9	....	....	....	....	....	....	.61	....	....
26 to 26.9	....	....	....	....	....	....	.63	....	....
27 to 27.9	....	....	....	....	....	....	.65	....	....
28 to 28.9	....	....	....	....	....	....	.67	....	....
Below 29	.43	.33	.43	.43	....	....	....	....	.54
29 to 29.9	.45	.35	.45	.45	....	....	.69	.45	.56
30 to 30.9	.47	.37	.47	.47	....	....	.71	.47	.63
31 to 31.9	.49	.39	.49	.49	....	....	.73	.49	.66
32 to 32.9	.51	.41	.51	.51	....	....	.75	.51	.70
33 to 33.9	.53	.43	.53	.53	....	....	.77	.53	....
34 to 34.9	.55	.45	.55	.55	.30	.33	.79	.55	....
35 to 35.9	.57	.47	.57	.57	.32	.35	.81	.57	....
36 to 36.9	.59	.49	.59	.59	.34	.37	....	.59	....
37 to 37.9	.61	.51	.61	.61	.36	.39	....	.61	....
38 to 38.9	.63	.53	.63	.63	.38	.41	....	....	....
39 to 39.9	.65	.55	.65	.65	.40	.43	....	....	....
40 and above	.67	.57	.67	.67	.42	.45	....	....	....

Column 1—Stanolind Crude Oil Purchasing Co. posted above prices on March 5, effective in Kansas, Oklahoma and East Central Texas, where it purchases oil. Magnolia Petroleum Co. posted same day but with these differences: Below 26 degrees, 40 cents; 26-26.9 degrees, 41 cents; 27-27.9 degrees, 42 cents; 28-28.9 degrees 43 cents. Tidal Refining Co. and Tidal-Western Oil Corp. adopted new price schedule March 5. Mid-Continent Petroleum Corp., Continental Oil Co., H. F. Wilcox Oil & Gas Co., Eason Oil Co., Standard Oil Co. of Kansas, Sinclair Refining Co., White Eagle Oil Corp. and Producers Oil Co. met the price on March 6, Champlin Refining Co. on March 7, Carter Oil Co., The Texas Company, Humble Oil & Refining Co., Empire Pipe Line Co., Gypsy Oil Co. and Gulf Pipe Line Co. met Stanolind prices on March 10, Pure Oil Co. posted same schedule in Van, Texas, Pool, March 5.

Column 2—Posted by Humble Oil & Refining Co., April 21. Met by Stanolind Crude Oil Purchasing Co., Gulf Pipe Line Co., Tidal Western Oil Co., Continental Oil Co., April 21. By The Texas Company and Magnolia Petroleum Co., April 23.

Column 3—Magnolia Petroleum Co., March 26, 1931; Humble Oil & Refining Co., April 21, 1931. Gulf Pipe Line Co., April 21, 1931.

Column 4—Standard Oil Co. of Louisiana and The Texas Company posted March 16. Standard prices apply to Caddo, Homer, Haynesville, Bull Bayou, Sabina, Crichton, De Soto, El Dorado, Cotton Valley, Sarepta and Carterville.

Column 5—Humble Oil & Refining Co., April 21. Other buyers met price effective April 21.

Column 6—Humble Oil & Refining Co., March 21. Other buyers met price effective April 21.

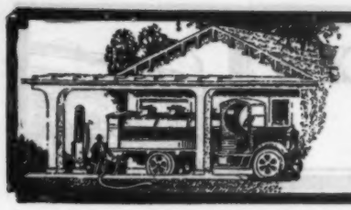
Column 7—Humble Oil & Refining Co., March 21. Gulf Pipe Line Co. met price effective April 21.

CALIFORNIA CRUDE OIL PRICES

(Posted by Union Oil Co. March 30 and the Standard Oil Co. of California March 31)

	Alamitos Hts., Signal Hill, Seal Beach, Torrance, Athens, Rosecrans, Dominguez, Santa Fe Springs, Montebello, Huntington Beach, East Coyote, Richfield, Brea-Olinda	Santa Paula	Orcutt	Coalinga, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills
11 to 13.9	....	....	....	$.50
14 to 14.9	$.65	$.60	$.55	.55
15 to 15.9	.65	.60	.55	.55
16 to 16.9	.65	.60	.55	.55
17 to 17.9	.65	.60	.55	.55
18 to 18.9	.65	.60	.55	.55
19 to 19.9	.65	.60	.55	.55
20 to 20.9	.65	.58	.53	.53
21 to 21.9	.62	.56	.51	.51
22 to 22.9	.59	.53	.49	.49
23 to 23.9	.56	.50	.47	.47
24 to 24.9	.53	.47	.45	.45
25 to 25.9	.50	.44	.43	.43
26 to 26.9	.47	.41	.41	.41
27 to 27.9	.44	.38	.39	.39
28 to 28.9	.41	.35	.37	.37
29 to 29.9	.38	....	.35	.35
30 to 30.9	.35	....	....	....

For the time being the Union Oil Co. and the Standard Oil Co. will not post a schedule of crude oil prices for the Playa del Rey and Kettleman Hills Fields.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns April 28

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago	14.0	14.0	3.0	9.0
Decatur, Ill.	14 4	14 4	3.0	9 0
E. St. Louis	13.7	13 7	3 0	8 2
Joliet	14.4	14.4	3 0	9.0
Peoria	14 4	14 4	3.0	9 0
Quincy	14 2	14 2	3 0	8.8
Davenport, Ia.	14 5	14.5	3 0	9.2
Des Moines	12.5	13 5	3 0	9 3
Keokuk	14 5	14 5	3.0	9.3
Sioux City	14.1	14 1	3.0	8.9
Duluth, Minn.	15.5	15 5	3.0	9.9
Mankato	15.1	15.1	3.0	9.7
Minneapolis	15 2	15.2	3 0	9.9
La Crosse, Wis.	16 2	16.2	4 0	10 0
Milwaukee	15.1	15 1	4 0	8.9
Madison	15 3	15.3	4.0	9.1
Detroit, Mich.	14.8	14.8	3 0	10.7
Grand Rapids	14 7	14 7	3.0	10 6
Saginaw	14 9	14 9	3 0	10.8
Evansville, Ind.	15.1	15.1	4 0	9 9
Indianapolis	15 3	15.3	4.0	10.1
South Bend	15 4	15.4	4 0	10.2
Fargo, N. D.	15.0	16.0	3.0	11.9
Huron, S. D.	16.3	16 3	4.0	10.7
Sioux Falls	15.8	15.8	4.0	10.4
K. C., Mo.	13 9	13 9	3.0	7.6
Springfield*	13 9	13 9	3.0	8 5
St. Louis*	12.9	12.9	2.5	8.3
St. Joseph	13.5	13 5	3.0	7.5
Wichita, Kans.	12.8	12.8	3.0	7.8
Bartlesville, Ok.	13 0	16.0	5.0	7.5

*State tax 2 cents, remainder city tax.

Stanolind Blue gasoline, 1 cent off tank wagon price posted for regular motor grade.

Effective April 15—Discounts on Q.D.A. on 1,000 gallons or more per month throughout territory: Red Crown Ethyl gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price.

Discount in Chicago division on 1,000 gallons or more per month: Red Crown Ethyl gasoline, 4 cents off tank wagon price; Red Crown gasoline, 3¼ cents off tank wagon price; Stanolind Blue gasoline, 2 cents off tank wagon price.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

PACIFIC COAST TERRITORY

	Gasoline			Kero.
	Wh'ls'e price	Retail* price	Incl'ds tax of	tank wagon
Fresno	14.0	11.0	2.0	17.0
San Francisco	14.0	11.0	3.0	15.5
Los Angeles	13.5	10.5	3.0	15.5
Reno, Nev.	20.0	19.0	4 0	19.0
Portland, Ore.	17.5	14.5	4.0	16 5
Seattle, Wash.	17.0	14.0	5.0	16.5
Tacoma	17.0	14.0	5.0	16 5
Spokane	21.0	20.0	5.0	20.5
Phoenix, Ariz.	18.5	20.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 3 cents plus a 2-cent special temporary discount subject to withdrawal at any time.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	16 6	17.6	2.0	15.6
New York*	15.3	15.3	2.0	14.3
Buffalo	15.8	15.8	2.0	14.8
Rochester	16.0	16.0	2.0	14.0
Syracuse	16.8	16.8	2.0	14.8
Boston, Mass.	15.5	15.5	2.0	13.5
Augusta, Me.	18 8	18 8	4.0	14.8
Manch'tr, N. H.	18 4	18.4	4.0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	12 0	8.0
V.M.&P. naphtha	14.0	9.5
Cleaners' naphtha	16.2	11.0
Stanisol	16.2	11.0

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

All dumps of 50 gallons or more ..... .07

Note—Outside Chicago furnace oils discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	18 0	16 0	6.0	12 5
Augusta	18 0	20 0	6 0	14.0
Macon	18.0	18.0	6.0	13.0
Savannah	18 0	18 0	6.0	12 0
Birm'ham, Ala.	17 0	19 0	5.0	13 0
Mobile	17.0	19 0	4.0	13 0
Montgomery	17 0	17.0	4.0	13.5
Clarks'le, Miss.	18 0	20 0	5.0	13 5
Jackson	15.0	13.0	5.0	11.0
Natchez	18 0	20.0	5 0	13.5
Gulfport	16.0	16 0	5 0	13.5
Vicksburg	16 0	18 0	5.0	11 0
Jack'ville, Fla.	17.0	19.0	6.0	12.0
Miami	18 0	20.0	6 0	13 0
Pensacola	16.0	18 0	6.0	13 0
Tampa	17.0	17 0	5.0	12.0
Lexington, Ky.	17 0	18 0	5.0	12.0
Covington	16 0	17.0	5.0	11.0
Louisville	16.0	17 0	5 0	11 0
Ashland	17 0	19 0	5 0	13.0
Paducah	17.0	18.0	5.0	11.0
Bowling Green	19 0	21 0	5.0	14 5
Corbin	18.0	19.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N.J.	14 2	16 2	3.0	11 5
Newark	13 2	15 5	3 0	10.6
Annapolis, Md.	16.0	17 0	4.0	11 0
Baltimore	15.2	16 2	4.0	9 5
Cumberland	17.0	18 0	4 0	13.0
Wash'gton, D.C.	13.4	14 4	2.0	10.0
Danville, Va.	17.8	18.8	5.0	11.8
Norfolk, Va.	16.3	17.8	5.0	10.0
Petersburg	17.8	18.3	5 0	11.3
Roanoke	17.7	18.7	5.0	12.0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16 5	17.5	4.0	11 5
Keyser	17.1	18.1	4.0	12.1
Parkersburg	15.2	16.2	4.0	10.2
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	19.0	20.0	6.0	11.0
Hickory	19 6	20.6	6.0	12.6
Mt. Airy	19 5	20 5	6 0	12.5
Salisbury	19.2	20.2	6.0	12.5
Charleston, S.C.	17.3	18.3	6.0	10.3
Columbia	19.2	20.2	6.0	12.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers, except in Washington, D. C., and in Maryland where discount is 3 cents.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	15.0	18 0	4 0	10.0
Fort Worth	13.0	15 0	4.0	10.0
Houston	14.0	18.0	4.0	11.0
San Antonio	14.0	18 0	4 0	10.0
El Paso	14.0	18.0	4.0	12.0
Texarkana	16 0	36.0	4.0	11.0
Muskogee, Okla.	13.0	16.0	5.0	8 0
Okla. City	11.0	13 0	5 0	8.0
Tulsa	13.0	13.0	5.0	8.0
Ft. Smith, Ark.	15.0	16 0	6.0	11 0
Little Rock	17.0	18 0	6.0	11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	15.0	18.0	4.0	12.5
Pueblo	14.0	17.0	4.0	12.0
Grand Junction	16.0	19.0	4.0	16.0
Casper, Wyo.	16.0	18.0	4.0	10.0
Cheyenne	16.0	19.0	4.0	11.5
Butte, Mont.	17.0	20.0	5.0	16.0
Billings	20.0	22.0	5.0	14.5
Great Falls	20.0	22.0	5.0	16.0
Helena	20.0	22.0	5.0	16.0
S'lt Lake, Utah*	18.0	17.0	3.5	16.0
Albu'que, N. M.	16.0	20.0	5.0	14.0
Boise, Idaho†	21.5	....	5.0	18.0
Twin Falls‡	21.5	....	5.0	18.0

*Less 4 cents. †Less 3 cents. ‡Less 4½ cents.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	*12.0	*14.0	...	12.0
Philadelphia	*12.0	*14.0	...	12.0
Scranton	*12.0	*14.0	...	12.0
Allentown	*12.0	*14.0	...	12.0
Altoona	*12.0	*14.0	...	12.0
Erie	*12.0	*14.0	...	12.0
Dover, Del.	15.0	17.0	3.0	12.0
Wilmington	15.0	17.0	3.0	12.0
Springf'd, Mass.	14.5	16.5	2.0	11.0
Fall River	14.1	16.1	...	11.0
Worcester	14.3	16.3	2.0	11.0
Boston	13.5	15.5	2.0	11.0
Providence, R.I.	13.7	15.7	2.0	11.0
Hartford, Conn.	14.5	16.5	2.0	10.0
New Haven	14.6	16.6	2.0	10.0

*Does not include tax of 3 cents in Pennsylvania. Pennsylvania tax is collected by the dealer and paid by him direct to the State. Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purpose of resale. Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	15.5	16.5	6.0	12.0
Baton Rouge	15.5	16.5	6.0	12.0
Alexandria†	16.5	17.5	6.0	12.0
Lafayette*	16.5	17.5	6.0	12.0
Lake Charles*	16.5	17.5	6.0	12.0
Shreveport	15.5	16.5	5.0	12.0
Knoxville, Tenn.	18 0	19.0	5.0	13.5
Memphis	15.0	16.0	5.0	10.0
Chattanooga	17.5	18.5	5.0	13.0
Nashville	17.0	18.0	5.0	12.5
Bristol	18.5	19.5	5.0	14.0
Lt. Rock, Ark.	16.5	17.5	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	15.0	16.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 14 cents.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	15.25	16 25	4.0	9.25
McCook	16.00	17.75	4.0	10.75
Norfolk	15.75	16.75	4.0	9.75
N. Platte	16.75	17.75	4.0	10.50
Scottsbluff	16.00	16.00	4.0	10.25

Note—Dealers' discounts allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off station price; third grade, 1 cent off station price.

TANK WAGON CHANGES

Standard Oil Co. (Kentucky) advanced the gasoline tank wagon price 2 cents to 15 cents in Jackson, Miss., April 16. On April 21 the station price was reduced to 18 cents in Macon, Ga.

Standard Oil Co. (Nebraska) reduced the gasoline station price 1 cent at practically all points and established a new schedule of dealers discounts as shown in the accompanying table April 20.

Continental Oil Co. advanced the gasoline tank wagon and station prices 1 cent in Pueblo, Colo., April 22.

Standard Oil Co. of New Jersey increased the gasoline tank wagon and station prices 2 cents in Charlotte, N. C., April 18. On the same day the station price at Salisbury, N. C., was increased from 18 to 20.2 cents. On April 23 the kerosene tank wagon price was reduced to 10 cents in Washington, D. C. On the same date the gasoline station price was advanced to 18.7 cents in Roanoke, Va.

Standard Stations, Inc., reduced the gasoline retail price 1 cent in San Francisco and Fresno, Calif., April 24.

Standard Oil Co. of California reduced the wholesale gasoline price 1 cent in Fresno, San Francisco and Spokane and 2 cents in Reno on April 24.

CRUDE OIL PRICE CHANGES

The South Penn Oil Co. reduced prices for Pennsylvania Grade crude on April 23 as follows: Pennsylvania oil in National Transit lines to $1.75, a 10-cent reduction; in southwest Pennsylvania Pipe Line lines to $1.70, a 10-cent reduction; in Eureka Pipe Line lines to $1.50, a 20-cent reduction; in Buckeye Pipe Line lines to $1.25, a 20-cent reduction. On April 27 the South Penn reduced oil in southwest Pennsylvania lines to $1.60.

The Tide Water Pipe Line Co., Bradford, Pa., reduced the price of Bradford and Allegany crude oil 15 cents per barrel, making the present price $2.

The Pure Oil Co. reduced Cabin Creek, Kelly's Creek and Bradford Hollow crude, all in West Virginia, to $1.50 per barrel.

Effective April 21, the Gulf Pipe Line Co. adopted the Humble Oil & Refining Co.'s new schedule in all the fields where both companies purchase oil in Texas, including the East Texas Field in which the Gulf had not previously posted a price. The Gulf also posted a price of 75 cents in Jennings, La.; 65 cents in Hankamer, Tex., and 65 cents in High Island, Tex.

Effective April 21, the Tidal Western Oil Co. met the Humble Oil & Refining Co.'s new price schedule so far as it affects Wichita County, Texas. Effective April 21, the Continental Oil Co. met the Humble schedule in Carson and Hutchinson Counties and in North Texas, and made a price of 32½ cents per barrel on Artesia, Jackson and Maljamar, New Mexico, crudes. Effective April 21 the Atlantic Oil Producing Co. met the Humble's prices in the districts in which both companies buy oil, and made a price of 32½ cents per barrel in the Ward County Field in West Texas.

On April 23 The Texas Company met the Humble Oil & Refining Co.'s new prices in Texas where both companies buy oil. The Texas Company does not post a price in East Texas.

On April 23 the Magnolia Petroleum Co. adopted the Humble Oil & Refining Co.'s new prices in North and Central Texas, West Texas and Texas Panhandle and posted 30 cents for Mitchell County crude, 38 cents for Corsicana heavy crude and 38 cents for Luling crude.

CRUDE OIL PRICES

(Continued from Page 101)

Tide Water Pipe Co.

Bradford district (Apr. 23, 1931)	$2.00
Allegany district (Apr. 23, 1931)	2.00

Pure Oil Co.

Cabin Creek, W. Va. (Apr. 23, 1931)	$1.50
Kelly Creek, W. Va. (Apr. 23, 1931)	1.50
Bradford Hollow, W. Va. (Apr. 23, 1931)	1.50

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective Mar. 6, 1931)

Lima	$ .90
Wooster	.99
Illinois	.80
Indiana	.50
Princeton	.80
Plymouth	shut in
Western Kentucky	.75
Midland, Mich.* (Mar. 13, 1931)	.75
Dundee, Mich. (Oct. 26)†	
	Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich. (Oct. 28, 1930)†	
	Same as Mid-Continent gravity scale
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky. (Apr. 1, 1931)§	.60
Oil Springs (Canada) (Oct. 28)¶	1.57
Petrolia (Canada) (Oct. 28)¶	1.50
Alberta (Canada)‖:	
50° and above (Mar. 1, 1931)	2.36
45 to 45.9° (Mar. 1, 1931)	1.87

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Paragon Development Co. §Posted by Stoll Refining Co. ¶Posted by Imperial Oil, Ltd. ‖Posted by Imperial Oil, Ltd., and Regal Oil & Refining Co. of Calgary.

MEXICAN CRUDE

Panuco*	$ .46

*F.o.b. ship, based on March transactions and exclusive of taxes and bar dues.

Of Interest to Sales Departments

English Combine to Raise Import Duty on Gasoline From Crude

By A. E. Mockler

NEW YORK, Apr. 27.—American export trade in gasoline and other refined products with Great Britain is seriously threatened by a plan now being put forward by the British Labor Government for the immediate introduction, on a large scale, of hydrogenation of oil from coal in England. The plan now being formulated by the labor government, it is understood, calls for the creation of a huge company, financed to a considerable extent by the British government, and including Imperial Chemical Industries, which, with Standard Oil Co. (New Jersey), Royal Dutch-Shell, and I. G. Farbenindustrie, the German dye trust, controls world rights to the hydrogenation process.

Considerable experimental work in the hydrogenation of coal has already been carried on successfully in England, and gasoline has been produced by this process at a cost of 16 cents per gallon. While this cost is out of line with the market for gasoline refined from crude petroleum, it is believed large scale production will lower costs, and gasoline produced from coal will be placed in a more favorable competitive position in the British market by an increase of 50 per cent in the present gasoline tax of 8 cents per gallon, and the exemption of oils made from coal from any taxes.

While it is conceded that the development of hydrogenation of oil from coal has not yet reached the point where this product is competitive with petroleum gasoline, from the cost basis, the benefits accruing to the British coal industry and British labor, through large-scale exploitation of hydrogenation, are expected to aid in offsetting the advantage enjoyed by the natural product, and the British Government evidently expects to balance its investment in the hydrogenation project through a lowering of the amount of money which it is expending in the dole to unemployed labor.

The proposed set-up of the organization to sponsor the large-scale hydrogenation project, under present plans, calls for the domination of the company by the British Government, whose representatives will make up all or most of the directorate of the new compnay. Imperial Chemical Industries, which controls patent rights for the process in the British Empire, will participate in the plan as the technical sponsors of the project, and will probably carry on the manufacturing operations.

Imperial Chemical Industries has experimented extensively with hydrogenation of oil from coal during the past year, and has produced oil from coal in its small experimental plant at a cost of approximately 16 cents per gallon. Large scale production, it is believed, will substantially lower this production cost, and with the added support from the government in the form of preferential treatment for gasoline and other oils made from coal, it is expected the hydrogenated product will enjoy a good market.

The British navy, one of the largest individual world consumers of fuel oil, is expected to take all of the fuel oil produced in England through hydrogenation, up to the limits of its consuming capacity, the added cost of this fuel to the government being written off as the navy's contribution to the easing of the unemployment situation in England. The British coal industry has been in a deplorable state for several years past, and maintenance of idle colliery workers by the government through the medium of the dole has been a severe strain on the British treasury. While the present proj-

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ATTORNEY GENERAL AGAIN EXPLAINS ATTITUDE ON ANTITRUST STATUTES

WASHINGTON, D. C., Apr. 27.—Neither the Interior Department nor the Department of Commerce is proposing any plan that would violate the Sherman antitrust law, Attorney General Mitchell said in discussing the legal phases of the administration's plan to aid the country's oil producers.

"As I understand it, both departments and other officials are seeking to help the industry settle its problems within the law," Mr. Mitchell said.

In an address before the University of Minnesota, Attorney General Mitchell was reported as follows:

"Enforcement of the antitrust laws has recently presented grave difficulties. Of course, the attorney general has no authority to declare a moratorium on antitrust laws because business is not prosperous, and no business man should persuade himself that public officials should wink at violations of the antitrust laws because it may be thought that methods condemned by those laws, if temporarily allowed, would more quickly improve conditions. At the same time, we have been impressed by the necessity of using peculiar care to make no unwarranted attacks on any business institution and to so regulate the action that we have to take as not to unnecessarily or unduly aggravate distress.

"Two aspects of antitrust enforcement which have stood out during the past two years have been, first, the activities of trade associations, and, second, the problems raised by the existing overproduction in so many industries related to natural resources. The trade association is a useful institution and great numbers of them are serving a useful purpose. Not infrequently, however, trade associations have been devised and used as a means or pretext for violating the antitrust laws either through the fixing of prices or suppression of competition.

"In such cases, the usual method is for some trade association promoter or expert to devise a set of trade association rules which, separately and individually, seem to be innocuous, and persuade the business men in a particular industry that the scheme is lawful and there will be no objection from the public authorities. In practice these rules may be so used and here and there things done that were not provided for, as to bring about conditions violating the law, and which go way beyond anything that the organization in its inception pretended to do. It is with cases of this kind that our greatest difficulties arise.

"You have often seen statements made that the Department of Justice has been attacking in the courts some trade association's code of rules that have been approved either by the Federal Trade Commission or by the department itself in years gone by. There has been no case where such an assertion was justified. If we have assailed any trade association operating under rules approved by the Federal Trade Commission, it has been because the association has been distorting its rules or going beyond them and doing acts which the trade commission never approved or considered; and when you next read a statement that the department is assailing in the courts some practice previously approved in the Department of Justice, accept the statement with a grain of salt.

"There have been a few instances where we have objected to practices apparently acquiesced in in the past, but in such cases, without any legal action, the parties interested have been informed of the department's views and arrangements made to readjust their activities to meet the objections. The department is not unfriendly to trade associations; on the contrary, it thoroughly believes in them.

"I am told that the Federal Trade Commission is re-examining some of the trade association rules they have heretofore acquiesced in but that action does not represent an unfriendly attitude on

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Dutch-Shell Manager Approves Murray Plan, Not Low Quality Gas

NEW YORK, Apr. 27.—The Royal Dutch-Shell group is in hearty sympathy with the efforts of the Oil States Advisory Committee to stabilize conditions in the oil industry, and will do everything in its power to aid in the furtherance of the committee's program, according to F. Godber, one of the managing directors of the Dutch-Shell group, now in New York. He characterized as "very unwise" the steadily increased production in the face of large existing oversupply and feels strongly that it is sure to delay indefinitely the recovery of the industry. Mr. Godber thinks that meeting "bootleg" competition by the marketing of low quality gasoline is a mistake that will still further aggravate overproduction.

"The Royal Dutch-Shell companies have long advocated and practiced a policy of conservation," Mr. Godber said. "The Shell Union Oil Corp. has complied without question with the allowable takings allotted its producing wells and has been active in its efforts to bring about the adoption by the whole industry of a sane and practical policy of conservation. In the same way the output of the properties of the Dutch-Shell group in other countries has been sharply curtailed. As announced last month the Shell Union Oil Corp., as a further contribution to the program of conservation in the United States, has arranged to reduce its imports by at least 50 per cent this year compared with 1930.

"The efforts of the Oil States Advisory Committee to provide a plan by which the industry can put itself on a sound, economic basis seem to offer an admirable way out of many present difficulties. Proration has been invaluable in limiting output and preventing waste, but proration should be made fully effective by an arrangement between the states. As the potential supply is increased by the development of new fields, the amounts allotted each state and each pool ought to be readjusted so that the total does not increase beyond that which can be absorbed by the demand. The plan the committee offers is sound and workable

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CITIES SERVICE USES WATER TRANSPORTATION

NEW YORK, Apr. 27.—A new record for river transportation of gasoline was established here this month when the Cities Service Ohio, the largest sea-going vessel to navigate the Hudson River under its own power, tied up at the docks of the A. R. Newcombe Oil Co. at Kingston Point, N. Y., and discharged 3,500,000 gallons of gasoline, the largest cargo ever to reach the river front at Kingston.

Capitan Connors, of the Cities Service Ohio, and Thomas Jensen, marine superintendent for the Cities Service Transportation Co., were hosts to a throng of visitors who inspected the tanker.

KOCH NEWLY CHOSEN VICE PRESIDENT QUAKER STATE

J. M. Koch, sales manager for the Quaker State Oil Co. and connected with the company in various capacities for eight years, has been elected vice president. Mr. Koch received a technical training at the Carnegie Institute of Technology, soon after which he entered the oil business.

Samuel Besser, president of the company, has credited much of the success in the sale of Quaker State oils to the new but sound methods fostered by Mr. Koch to meet the changing marketing conditions.

PAUL RYAN MANAGER

Paul Ryan

Paul Ryan, recently placed in charge of sales promotion and advertising for the Shell Petroleum Corp.

SEEKS RATE REVISIONS

WASHINGTON, D. C., Apr. 25.—The Texas Corporation has petitioned the Interstate Commerce Commission to reopen proceedings in its recently announced decision revising rates on petroleum and its products throughout the South and Southwest.

The petition asserts that the ruling prescribes a materially higher basis of rates from points of origin used by Texaco and others than it prescribed from points of origin used by their competitors in the South.

The petition says the company expects to show, if granted a further hearing, that the commission has singled out the South to impose upon it a rate level on petroleum products so far in excess of the highest levels prescribed in other sections of the country as to warrant criticisms made by dissenting commissioners that such levels were prescribed upon a mistaken notion that they were designed to preserve carriers' revenues rather than warranted by the evidence submitted. "We shall also point out that there has been such a substantial and overwhelming change in the whole petroleum industry since these petitions were filed five years ago and that the changed conditions make the announcement of a decision at this time, upon a record made four years ago, an ill-timed and ill-fitted action."

New York Standard's Annual Report

Humble Oil & Refining Co. and Subsidiaries Show Net Profit for Year. Petroleum Corp. Annual Meeting

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 27.—Standard Oil Co. of New York reports for 1930 net earnings on operations of $16,496,727, equivalent to 92 cents per share on 17,849,402 shares, as compared with net profit of $38,750,849, or $2.23 a share on 17,379,572 shares in 1929.

During the past year, however, the New York Standard company effected the sale of large natural gas properties on which it realized profits of $23,749,472, less federal taxes. This was shown in the income account as an addition to the 1930 profits, making total net income for the year $40,246,198, or $2.25 per share. Income from operations alone, therefore, failed to cover the dividend requirements for the year, dividends paid during 1930 amounting to $28,501,379. The net addition to the company's surplus during 1930 was $12,336,650, making the total surplus $132,345,997 as of December 31, 1930.

Notwithstanding the sale of the gas properties last year, however, total assets were larger at the close of 1930 than at the end of the previous year, due to important acquisitions of refining, marketing and other properties during 1930. Total assets of December 31, 1930, were $720,305,566, as compared with $708,408,362 at the close of the preceding year.

The report showed a further material strengthening of the company's current position last year. Current assets of $238,478,763 at the close of 1930 were approximately $11,500,000 in excess of the current assets of $226,910,445 reported at the close of 1929, and in addition current liabilities were reduced from $47,356,122 to $38,178,953 on December 31, last.

The increase in current assets was achieved in the face of a cut of almost $21,000,000 in crude oil inventories and of more than $2,000,000 in the valuation of materials and supplies. These write-offs were more than offset by an increase of $22,908,940 in cash holdings, and an increase in securities held from $1,190,668 at the close of 1929 to $22,504,998 at the end of 1930.

Socony's reserves for depletion, depreciation and amortization increased from $346,197,542 in 1929 to $375,040,723 in 1930.

Humble Oil & Refining

Report of Humble Oil & Refining Co. and subsidiaries for year ended December 31, 1930, shows net profit of $18,083,490 after interest, depreciation, depletion, intangible development costs, federal taxes, etc., equivalent to $6.08 a share (par $25) on 2,974,645 shares of stock. This compares with $32,535,080, or $10.93 a share in 1929.

Petroleum Corp.

Since the close of last year Petroleum Corp. of America has disposed of its holdings of 10,657 shares of Phillips Petroleum Co. stock and its 5,000 shares of General American Tank Car. Corp. common, and has sold part of its holding in Ohio Oil Co. common, which totaled 90,000 shares at the end of 1930. The corporation has added 900 shares to its holding of Prairie Oil & Gas Co. stock, amounting to 582,800 shares on December 31 last year, while its investment in Prairie Pipe Line Co. stock remains unchanged at 555,600 shares. Since the close of last year it has acquired 12,300 shares of International Petroleum, Ltd., stock.

At the annual meeting, H. D. Sheldon, secretary, was temporarily elected a director, and all other directors, with exception of Garrettson Dulin, of Tucker, Hunter, Dulin & Co., and R. E. Harding, president of Fort Worth National Bank, were re-elected.

The board of directors of Petroleum Corp. of America declared the dividend of 25 cents per share payable June 1, 1931, to stockholders of record at the close of business May 15, 1931. In connection with the declaration of this dividend, it was stated that the net income of the corporation from dividend and interests alone received since the payment of the last dividend on January 31, 1931, was more than sufficient to cover the dividend declared at this time.

It was also stated that payment of the future dividends would be dependent on the income received by the corporation in the future on its investments.

Pierce Petroleum

Report of Pierce Petroleum Corp. and subsidiaries (includes subsidiaries for six months ended June 30, only) for year ended December 31, 1930, shows net loss of $461,123 after interest, provision for losses on accounts and notes receivable, depreciation and depletion. This compares with consolidated profit of $1,067,402 in 1929. No mention is made of federal taxes in 1929.

Balance sheet of Pierce Petroleum Corp. as of December 31, 1930, follows:

Assets: Cash in bank and certificate of deposit, $310,925; investment in Sinclair Consolidated Oil Corp. (645,834 shares of common), $19,386,867; total, $19,697,792.

Liabilities: Common stock (represented by 2,500,000 no-par shares), $19,134,519; surplus, $563,273; total, $19,697,792.

Louisiana Oil

Louisiana Oil Refining Corp. declared the regular quarterly dividend of $1.62½ on the 6½ per cent cumulative convertible preferred, payable May 15 to stock of record May 1.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Sept. 3	42.71	Dec. 31	26.15
Sept. 10	42.84	Jan. 7	27.56
Sept. 17	42.43	Jan. 14	27.31
Sept. 24	40.62	Jan. 21	27.55
Oct. 1	37.78	Jan. 28	27.26
Oct. 8	35.85	Feb. 4	27.26
Oct. 15	35.21	Feb. 11	28.76
Oct. 22	31.88	Feb. 18	28.53
Oct. 29	32.80	Feb. 25	29.33
Nov. 5	31.77	Mar. 4	27.67
Nov. 12	30.18	Mar. 11	26.53
Nov. 19	31.54	Mar. 18	26.78
Nov. 26	30.86	Mar. 25	26.35
Dec. 3	30.53	Apr. 1	24.80
Dec. 10	28.57	Apr. 8	25.52
Dec. 17	25.42	Apr. 11	24.72
Dec. 24	25.68	Apr. 18	22.73

Warner-Quinlan

Warner Quinlan Co. reported for 1930 net loss of $1,655,382, including its proportionate share of profit or loss of affiliated companies. For 1929 the company reported net profit of $1,722,955, equal to $2.72 a share on the amount outstanding at the end of the year. The company charged out of 1929 earnings $358,000 to adjust inventory of storage crude oil valued at market December 31, 1929, to give effect to the reduction in price on January 15, 1930. After this deduction, the balance was equal to $2.15 a share on the stock outstanding December 31, 1929.

GOVERNOR WOODRING CALLS OIL CONFERENCE

TOPEKA, Kans., Apr. 25.—A conference of the governors of nine states has been called by Governor Harry H. Woodring, of Kansas, to consider a compact for "the establishment of a parity with other sections in the matter of national legislation affecting their economic welfare."

The meeting is to be held at Wichita, Kans., on May 19, according to Governor Woodring's invitation, which he announced had been sent to the governors of Arkansas, Colorado, Missouri, Nebraska, New Mexico, Oklahoma, Texas and Wyoming.

"It is evident," Governor Woodring said in a letter to the governors, "that sooner or later the states interested in the success of agriculture and those interested in the preservation of the oil industry must form an economic compact which has for its purpose the establishment of a parity with other sections in the matter of national legislation affecting their economic welfare."

He called attention to the fact that the meeting at Wichita would be held prior to the annual Governors' Coference at French Lick, Ind., June 1-3, and stated that "the advantage of a full discussion of the economic plight of agriculture and oil in the Mid-Continent area before the conference at French Lick Springs is obvious." He added that he thought the proposed compact should also be in the interest of all natural resources, including coal, salt and other minerals.

REFINERY NEARS COMPLETION

CHATHAM, Ontario, Apr. 25.—It is expected that the new refinery of the Northwestern Stellarene Co. at Couts, Alberta, will start operating about May 1.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending April 18)

1931 High	1931 Low	Week ending Apr. 18 Sales	High	Low	Close Apr. 32	Stocks	Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1	⅛	500	⅜	⅜	..	Atlantic Lobos	499,448	N.P.	....	5-28-30	..	..	..	..	1	⅛
12⅞	7⅞	200	7⅞	7⅞	..	Borne Scrymser	$1,000,000	$25	....	10-15-30	56½	44½	46½	25	25	11¼
51	40	800	50	49	..	Buckeye Pipe Line	$10,000,000	$50	$1Q	3-14-31	76	53	74½	55	69	39⅞
125	110	100	122½	122½	120	Chesebrough Mfg.	$3,000,000	$25	$1Q‡	3-31-31	161	117	210	130	184⅞	104¼
3½	2⅜	6,900	2¾	2⅝	2¾	Creole Petroleum	(sh) 5,977,873	N.P.	....	.....	17½	9½	11⅜	5⅝	7⅝	3
27	20⅝	No sales.	..	..	..	Cumberland Pipe Line	$1,500,000	$50	50cQ	3-16-31	114	67	75¾	40	65⅝	20¼
29¾	27	300	21	28⅞	..	Eureka Pipe Line	$5,000,000	$100	$1Q	2- 2-31	88	64⅛	70½	42	54¾	26
2⅞	1⅝	100	1⅝	1⅝	..	Galena Signal Oil	$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	53⅝	7,400	55½	54⅛	53⅝	Humble Oil & Refining	$74,103,300	$25	50cQ	4- 1-31	114⅝	59½	128	74⅛	119	57¼
18¼	12¼	10,000	15¼	13½	12¼	Imperial Oil of Canada	(sh) 25,421,768	N.P.	12½cQ	3- 2-31	104	56¾	41	22	30	15
21⅛	14½	300	16½	16	14½	Indiana Pipe Line	$3,000,000	$10	50cQ	2-14-31	91⅞	74⅜	41⅞	26	41	14½
15½	11½	19,100	12¼	11⅞	11½	International Petroleum	(sh) 14,247,088	N.P.	25cQ	3-16-31	55	35	30⅜	15	24	11⅜
17⅛	12¼	300	15¼	14¾	14⅛	National Transit	$6,362,500	$12.50	25cQ§	4-16-31	32⅝	19⅜	25⅛	10⅛	22⅜	11½
14½	10⅛	700	11	10⅛	..	New York Transit	$1,000,000	$10	25cQ	4-15-31	75	38½	17½	10	21⅜	10⅛
30	28	No sales.	..	..	..	Northern Pipe Line	$2,000,000	$50	$28A	1- 2-31	69	56½	63	41	54	26¼
15½	12	100	12	12	..	Penn Mex Fuel	$10,000,000	$25	....	12-15-30	84	28	44½	20	32	12
8	5⅜	900	7	5⅝	..	Solar Refining	$4,000,000	$25	....	12-20-29	..	..	50	29	33	4⅞
17	10	600	17	15	..	Southern Pipe Line	$1,000,000	$10	50c	3- 2-31	19	15	22½	13	20⅞	8⅜
23⅞	15⅛	2,400	18⅛	17	15⅛	South Penn Oil	$30,000,000	$25	25cQ	3-31-31	71⅞	36¾	60¼	35½	45⅞	16⅛
38	33	350	38	34¾	..	Southwest Pennsylvania Pipe Line	$1,750,000	$50	$1Q	3-16-31	102	70	70	60	64	32
38½	29¼	38,200	31⅛	30	29¼	Standard Oil of Indiana	$348,175,069	$25	50cQ	3-16-31	95⅞	70⅞	63	45	59⅞	30
23⅝	19⅜	10,600	21½	19⅝	19⅝	Standard Oil of Kentucky	$25,654,516	$10	40cQ	3-31-31	179¾	122¼	46⅞	29	40½	18⅝
36½	28⅞	No sales.	..	..	..	Standard Oil of Nebraska	$4,649,225	$25	50cQ	3-20-31	54⅞	39⅞	50¼	40	48⅞	34⅝
62½	49	150	52¼	52¼	..	Standard Oil of Ohio	$14,000,000	$25	62½cQ	4- 1-31	134	71	129	60	108½	43¾
3½	3½	No sales.	..	..	..	Swan-Finch Co.	$861,466	$25	....	1-15-29	23½	16	18	10	10	4
69¾	46¼	10,500	55¼	49	46⅝	Vacuum Oil Co.	$126,180,350	$25	$1Q	3-20-31	111	72	133¾	75	97⅞	45⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra. §Plus 10 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.
(Complete record week ending April 18)

1931 High	1931 Low	Week ending Apr. 18 Sales	Week ending Apr. 18 High	Week ending Apr. 18 Low	Close Apr. 22	Stocks		Outstanding Capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1¾	⅝	7,200	1¼	⅞	⅞	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3½	8⅝	1⅛	4½	½
16⅞	10	500	11¾	10	..	British American Oil Corp. (new) coup.		1,311,321	N.P.	20cQ	4- 1-31	55	32¾	62	7⅞	23	13⅜
2⅜	½	11,800	1½	10	..	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2⅜	⅝
20¾	15	104,700	18¼	16¾	16⅛	Cities Service	(sh)	24,290,359	N.P.	30cA‡	4- 1-31	90⅞	54	68⅛	20	44¼	13
84¾	79¾	2,000	84½	83½	83¼	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	4- 1-31	103¼	94½	98⅜	84	93⅞	78⅛
½	1/16	2,900	¼	¼	1/16	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	¾	⅛
2¾	2	No sales.	..	..	..	Consolidated Royal		$5,000,000	$10	7½cQ	4-25-31	8⅞	6¼	11⅛	2½	5⅞	2
⅝	⅜	No sales.	..	..	..	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	3½	100	3½	3½	..	Darby Petroleum		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21¾	4¼
6	2⅝	300	3⅝	3½	..	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40⅛	30	No sales.	..	..	..	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20⅜	60	30
75½	55⅝	4,400	63⅛	58	55⅝	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	4- 1-31	165	101⅛	209	115	166⅞	58½
⅝	⅜	14,500	1/16	½	½	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅜	1⅜	⅜
1⅞	⅝	200	⅞	⅞	..	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	⅝	2,200	1	¾	⅝	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅛	1	4¾	⅛
6¾	5⅜	100	5½	5½	5⅜	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅞	20	38⅞	18	29	4⅞
25	17¼	3,800	19½	17½	17¼	Lone Star Gas	(sh)	5,000,000	N.P.	22cQ	3-31-31	69⅛	48½	67⅞	28	55⅞	19⅝
½	⅛	44,100	½	⅜	⅜	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1⅞	½	1¼	⅛	½	⅛
5	3	400	5	5	..	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅜	1½	100	3¼	3¼	3	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2¾	6⅜	2¼	7½	1⅜
½	¼	No sales.	..	..	..	Mountain & Gulf		$4,000,000	$1	1cQ	4-15-31	1⅜	.76	1½	¼	⅝	⅜
5⅜	4⅛	1,300	4⅜	4⅛	4¼	Mountain Producers		$1,682,182	$10	25cQ	4- 1-31	28⅞	19½	22⅞	7	12½	3⅜
1½	1⅛	500	1⅜	1¼	..	New Bradford Oil		$1,095,291	$5	4cQ	1-15-31	5⅝	4¼	5	2½	3½	1⅛
3	1⅞	400	2¼	2	..	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1½
3¼	1¾	No sales.	..	..	..	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2½
½	¼	6,900	⅜	¼	1/16	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	1⅛	200	1¼	1¼	1¼	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅛
2½	1¾	No sales.	..	..	..	Red Bank Oil	(sh)	250,000	N.P.	....	.....	18	4⅞	16	9⅝	10⅛	1½
1⅝	1	No sales.	..	..	..	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4½	8½	1⅛	5⅜	1
3	2	No sales.	..	..	..	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	3	8⅝	2
1⅜	1	100	1⅛	1⅛	..	Salt Creek Consolidated	(sh)	1,286,300	$10	7cQ	4- 1-31	7¼	5½	5⅞	1⅞	2½	½
7⅝	5⅝	1,800	6¾	5¾	5⅝	Salt Creek Producers	(sh)	1,496,859	$10	50c	2- 2-31	35	23⅛	25⅞	9	15¼	5¼
5¼	2⅜	7,200	3¾	3	2⅞	Sunray Oil Corp.	(sh)	1,163,185	$5	5%Q§	4-15-31	..	..	12	5⅝	10	2
1⅞	⅞	200	1	1	..	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4⅜	6½	1⅜	4½	⅝
3½	1½	200	3½	3	..	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
⅞	⅜	600	¾	⅜	..	Y Oil & Gas		100,000	N.P.	....	.....	8¾	2⅛	2⅞	½	2½	⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.
(Complete record week ending April 18)

1931 High	1931 Low	Week ending Apr. 18 Sales	Week ending Apr. 18 High	Week ending Apr. 18 Low	Close Apr. 22	Stocks		Outstanding Capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
23	17½	3,200	19½	18	17⅞	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-30-31	43⅞	27½	42⅝	17½	31½	16½
12⅜	6½	1,200	8	7¼	6½	American Republics Corp.	(sh)	209,180	N.P.	$3.50SA	12-10-30	85	51⅛	64¾	12½	37	5⅛
31	26½	10	30	30	..	Associated Oil		$57,260,300	$25	50cQ	3-31-31	53⅜	37½	47¼	34½	51	30
23⅝	15¾	23,400	19	15¾	15¾	Atlantic Refining		$66,763,775	$25	25cQ	3-16-31	66⅜	50	77⅞	30	51⅜	16⅝
14½	9⅝	18,800	11⅜	9¾	9⅝	Barnsdall Corp. A		$56,546,600	$25	25cQ	2-16-31	54	20	49¼	20	34	8⅝
12	7½	25,100	9⅛	8	7¾	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	.....	..	..	47⅞	18	30½	7⅝
47	21½	13,600	30¼	24⅞	21⅝	General Asphalt	(sh)	413,333	N.P.	75cQ	3-16-31	94⅞	68	94¾	42¼	71½	22⅝
68½	35¾	26,600	56⅛	45¾	43½	Houston Oil		$24,968,600	$100	....	.....	167	79	109	26	116⅞	29¼
14⅛	8¼	17,100	12¾	10½	9⅞	Houston Oil (new)	(sh)	998,744	$25	....	.....	..	..	..	..	11⅝	6⅝
4⅝	2¼	2,100	3½	3	2¼	Indian Refining		$12,564,070	$10	....	.....	39⅝	9	53	13⅛	17	2
4½	3¾	2,700	4	3⅞	3¾	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	1⅞	500	2⅛	2⅛	1⅞	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅜
20¾	10⅝	87,700	20⅝	17¾	17¼	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	72	4⅜	59⅜	8¼	37	9⅜
16¾	9¼	6,600	11	10⅛	9¼	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	2-16-31	44½	25⅛	39⅞	22⅛	32	11
19½	10½	19,700	13⅜	11½	10⅞	Ohio Oil	(sh)	6,648,052	N.P.	25cQ	3-14-31	84	58½	79⅞	64¼	32	16
35⅞	32	100	32	32	..	Pan American P. & T.		$50,084,700	$50	....	12-20-27	50⅞	38¼	69	40½	46½	42
36½	31½	1,200	32	32	31½	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	59⅞	37⅜	69¼	40½	67¼	30
4¼	2	100	2¾	2¾	2	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12⅜	1⅜
20	10	50	20	15½	..	Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	80	47½
16⅝	8⅜	14,800	10⅛	9	8⅜	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅜	11½
1½	⅝	2,300	⅞	¾	¾	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3⅜	1⅜	1,700	2⅜	2¼	2	Pierce Petroleum	(sh)	2,500,000	N.P.	10c	2-16-31	7	3½	5⅞	½	7⅛	1⅜
20⅜	12⅜	10,200	14⅞	12⅜	13	Prairie Oil & Gas		$80,848,000	$25	50eQ	3-31-31	68	46	65⅜	40½	54	11¼
26½	17⅞	18,300	24	22	21½	Prairie Pipe Line		$101,250,000	$25	75eQ	3-31-31	280	172	65	45	60	16⅝
6	2½	300	4	4	3¾	Producers & Refiners		$37,438,950	$50	....	9-15-23	29⅞	16	25⅞	4	11⅞	1
16	11⅞	No sales.	..	..	..	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46¾	25½	40	11½
11⅞	7½	9,100	8¼	7⅞	7¾	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30⅜	20	27¼	7⅝
6⅜	2⅛	6,800	2⅞	2½	2⅛	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	23	49⅝	20	9⅝	4⅛
10¼	5⅜	2,000	7¼	6½	6¼	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25⅝	5
42⅝	30	10,200	36¼	32⅜	30	Royal Dutch, N. Y.	(sh)	611,303	....	$1.3404	1-30-31	64	44⅝	64	43⅛	56½	36⅞
34	26½	300	29	26½	..	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	1-23-31	47⅞	41⅜	51½	40⅝	48⅝	26
10¼	6¼	12,170	7⅜	6½	6¼	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31⅜	19	25½	5¾
11	6⅝	200	7	7	..	Simms Petroleum		$8,353,620	$10	....	9-15-30	27¾	18⅛	40⅛	15	37	5⅝
15⅞	10½	28,300	12⅝	11¼	10⅜	Sinclair Consolidated	(sh)	5,500,000	N.P.	25cQ	4-15-31	46¾	17⅜	45	21	32	9⅝
103	95	700	103	102½	98	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	2-14-31	110	102½	111	103	112¼	86
12⅞	5½	2,200	8¼	7¼	5⅝	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	42	10⅛
51¾	40½	17,400	43⅞	42	40½	Standard of California	(sh)	12,594,098	N.P.	62½cQ	3-16-31	80	63	81⅞	51½	75	42¼
19	13⅛	2,700	15⅜	13¾	13⅛	Standard of Kansas		$8,000,000	$25	25cQ	3-16-31	37⅜	15	33¾	18	49	14⅜
52½	37⅜	60,900	43⅜	40⅜	37⅜	Standard Oil of New Jersey		$634,999,200	$25	25cQ‡	3-16-31	59⅜	37⅜	83	49	84⅞	32½
26	19⅜	28,550	22	20½	19⅜	Standard Oil of New York		$445,223,675	$25	40cQ	3-16-31	33¼	28¾	48⅛	31⅜	40⅜	19⅝
45¼	38⅞	300	41½	41½	38⅞	Sun Oil	(sh)	1,416,869	N.P.	25cQ	3-16-31	77	31½	68⅝	55	70	30
1¾	¾	300	1¼	1	1	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	⅜
36¼	24⅝	42,000	28¾	26⅜	25¼	The Texas Corporation		$246,204,900	$25	75cQ	4- 1-31	74⅜	50	71⅞	50	60½	28¼
6½	4¼	1,800	4½	4½	4⅛	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
18	10½	No sales.	..	..	..	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	3-31-31	41½	19⅝	40	14	31	13
83	69¼	No sales.	..	..	..	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	2-16-31	100⅛	86	97½	85⅛	94⅞	71
9	5½	11,700	6⅞	6	5½	Tide Water Associated	(sh)	5,560,424	N.P.	30c8A	2-16-31	25	14¾	23½	10	17⅜	5⅞
68	53½	1,300	58½	57	53½	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	4- 1-31	..	..	90⅞	74½	89⅝	55
26⅝	19⅜	6,600	21¾	19⅞	19⅜	Union Oil of California		$104,342,375	$25	50cQ	2-10-31	58	42⅜	57	42½	50	20⅛
25⅛	20	1,300	21⅜	21	..	Union Tank Car.	(sh)	1,254,048	$100	40cQ	3- 2-31	128⅛	110	163¾	121⅞	38½	23
7⅜	4	1,000	4½	4¼	4⅛	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¼
9⅜	6¼	2,200	9	7⅜	7¾	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6¼

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.
In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

BUNKER OIL PRICE IS REDUCED IN EAST

(Continued from Page 94)

a barrel, off 1 cent from the previous figure.

Petroleum Exports

Aggregate export movement of refined petroleum products from New York during the week ended April 18 were fairly well maintained, and with a little improvement in export inquiry, traders here are looking for a well maintained flow of refined products into export markets.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Apr. 18	Apr. 11	Apr. 4
Gasoline	195,000	675,000	150,000
Naphtha	145,000	750,000	215,000
Kerosene	140,000	105,000	40,000
Fuel oil	295,000	190,000	20,000
Lubricating oil	2,960,000	1,450,000	3,207,000
Petroleum, refined	960,000	965,000	950,000
	Pounds		
Petrolatum	12,000	200,000	40,000
Paraffin wax	2,165,000	1,485,000	2,590,000
Refined	100,000	30,000	.....
Scale	430,000	585,000	650,000
Lubricating grease	750,000	950,000	1,010,000

Imports

Imports of crude and refined petroleum at the principal United States ports during the week ended April 18 totaled 1,522,000 bbls., a daily average of 217,429 bbls., as compared with 1,377,000 bbls., a daily average of 196,714 bbls. during the previous week and a daily average of 232,786 bbls. for the four weeks ended April 18. Details follow:

(Barrels of 42 Gallons)

	Bbls.
At Atlantic Coast Ports—	
Baltimore	295,000
New York	768,000
Philadelphia	75,000
Others	332,000
Total	1,470,000
Daily average	210,000
At Gulf Coast Ports—	
New Orleans and Baton Rouge	52,000
Total	52,000
Daily average	7,429
At all United States Ports—	
Total	1,522,000
Daily average	217,429
Daily average four weeks	232,786

Distribution of total imports is as follows:

Crude	974,000
Gasoline	256,000
Fuel oil	292,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended April 18 totaled 196,000 bbls., a daily average of 28,000 bbls., as compared with 192,000 bbls., a daily average of 27,429 bbls. for the previous week, and a daily average of 50,071 bbls. for the four weeks ended April 18. Details follow:

(Barrels of 42 Gallons)

	Bbls.
At Atlantic Coast Ports—	
Baltimore	73,000
New York	51,000
Others	72,000
Total	196,000
Daily average	28,000
At Gulf Coast Ports—	
All ports	None
At Atlantic and Gulf Coast Ports—	
Total	196,000
Daily average	28,000
Daily average four weeks	50,071

Distribution of total California oil receipts is as follows:

Gasoline	196,000

Shipments of refined products from California for Atlantic and Gulf Coast ports during the week (with identity of owner of tanker moving the oil where such owner is an oil company) were as follows:

To New York—81,000 bbls. of gasoline on the Agwiworld (Richfield); 72,000 bbls. of gasoline on the Illinois (The Texas Company); 73,400 bbls. of gasoline on the Pat Doheny (Richfield) and 91,900 bbls. of gasoline on the China Arrow (Standard Oil Co. of New York).

To Philadelphia—114,400 bbls. of gasoline on the Eastern Sun (Sun Oil Co.).

To Wilmington, N. C.—78,500 bbls. of gasoline on the Washington.

To Port Arthur, Tex.—119,700 bbls. of Diesel oil on the California.

Charter Market

There are no more inquiries for full clean cargoes and more tonnage is being forced to lay up, say Funch, Edye & Co., Inc., in their weekly survey of the charter market. A Norwegian motorship, which was recently closed for a clean cargo from Black Sea to Vladivostok, has secured a cargo of molasses from Java or Philippines to northern states. With the exception of one or two inquiries for small parcels of clean oil transatlantic, May-June, the report continues, the market is practically dead. It is reported that a large whale oil carrier has been closed for a cargo of crude oil from Aruba to Teneriffe at 5/9, May 1/15, and further black oil tonnage can be placed transatlantic from Tampico or vicinity, April-May-June, for charterers continue to wait. No trading was reported in the American coastwise or intercoastal markets and there is no inquiry.

Fixtures during the week were as follows: Nor Motorship Chr. Th. Boe, 8,000 tons cargo, molasses, Java and/or Philippines to United States, north of Hatteras, $4.34 if Java, $4.56 if Philippines, $4.69 if both places, June 25/10 July. Ital Stmr Centaurus, 4,350 tons part cargo, gas and/or fuel oil, Constanza to Bona 6/-, option French Mediterranean 8/6, spot.

ROCKY MOUNTAIN AREA

(Continued from Page 39)

standing at 782 feet with 15½-inch cemented on bottom waiting for completion of water wells.

Lincoln County

Wyoming Production Co.'s No. 1 Neil, NW SE NW, Section 14-24-113, Fontenelle district, is resuming at 1,420 feet after landing the 10-inch on bottom.

Sweetwater County

Mountain Fuel Supply Co.'s No. 1 Cappers, SW cor. NE, Section 2-19-104, North Baxter Basin, is standing with 6⅝-inch cemented at 3,485 feet.

Fremont County

Producers & Refiners Corp.'s No. 10, SE NW SW, Section 14-32-95, Big Sand Draw, is coring hard gray shale at 5,092 feet and has reamed to 5,081 feet. It is reported to have topped the Sundance formation at 4,990 feet. The first bench was dry and the second showed saturation in the core. The company's geologists map three benches of the Sundance with a total thickness of 400 feet, including the breaks.

The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, has resumed at a total depth of 4,485 feet and is trying to lubricate. The 6⅝-inch is at 4,409 feet. This well made 12,500,000 feet of gas and 20 to 25 bbls. of 31 gravity oil from the Dakota at 4,380-93 feet. It was drilled to the present depth last summer and since then the hole has given all kinds of trouble. It is the intention to drill through the Lakota and test the Sundance, if possible.

Carbon County

Producers & Refiners Corp.'s No. 1, Section 7-26-86, South Ferris, is bottomed at 198 feet with 10-inch at 118 feet and preparing to run 8¼-inch.

Niobrara County

Indian Petroleum Co.'s No. 1, NW NE, Section 7-35-65, Lance Creek, is drilling at 3,815 feet in a wet hole and will set the 4½-inch as soon as a suitable landing place is found. It is an old well being deepened to the Sundance.

Weston County

Arro Oil & Refining Co. has posted a price of 98 cents for Osage crude, effective April 15, and will take all that is offered. This clarifies the marketing situation in that field. The posted price is 43 cents above the old price quoted by the Midwest Refining Co. which recently withdrew as a purchaser. A number of small refineries in the district are operating on Osage crude. The production is around 1,500 bbls. daily. The Arro company has been buying crude in the field for its Lewistown, Mont., refinery for the past year at Mid-Continent prices under contract, but now it has posted a price and offered to buy all oil offered.

One completion was reported. Wytex Oil Co.'s No. 4 Logan McCullough, C NE NE, Section 23-46-64, is swabbing 100 bbls. per day from sand at 1,614-27 feet. It is cleaning out to shoot. Clark and others' No. 1, SE NE NE, Section 15-46-64, is drilling out cement at 1,524 feet, and Hugh Updike's No. 1, SE SW NW, Section 23-46-64, is ready to spud. Decker Oil Co.'s No. 1, NW NE NE, Section 1-45-64, is shut down at 2,124 feet waiting for casing, and Tom Don's No. 2, NW cor. SE, Section 23-46-64, is building standard rig. Chadron-Osage Oil Co.'s No. 12, CWL NE SE, Section 14-46-64, is waiting for cement to set after setting the 8¼-inch at 1,224 feet.

Rocky Mountain Production

Average daily production in week ending April 25:

WYOMING	
Salt Creek	25,130
Big Muddy	1,940
Byron	5
Dallas-Derby	620
Dutton Creek	120
Elk Basin	650
Ferris	30
Frannie	860
Grass Creek	2,040
Hudson	530
LaBarge	1,410
Lance Creek	180
Lost Soldier	4,630
Lovell	.....
Oregon Basin	1,380
Osage	1,130
Rock River	1,970
Poison Spider	220
Simpson Ridge	.....
South Casper	380
Teapot	20
Warm Springs	.....
Total Wyoming	43,295
MONTANA	
Buckley-Border	760
Cat Creek	1,080
Dry Creek	660
Kevin-Sunburst	4,450
Lake Basin	50
Pondera	1,630
Total Montana	8,630
COLORADO	
Florence	340
Fort Collins	1,010
Iles	1,020
Moffat	940
Orchard	350
Rangely	50
Tow Creek	370
Total Colorado	4,080
NEW MEXICO	
Rattlesnake	1,075
Hogback	460
Table Mesa	80
Artesia	530
Cap Rock	270
Getty	.....
Hobbs	32,100
Jal	990
Lea City	2,610
Eunice	450
Texas-Pacific area	157
Total New Mexico	38,732
Total Rocky Mountain fields	94,727
Total previous week	95,904
Difference	1,177

INDUSTRY SICK BUT REFUSES MEDICINE

(Continued from Page 18)

yond the fact that each of them has attempted separately to control its own domestic affairs.

"Interstate compacts form the only evident plan for bringing the oil producing states into some uniform method of making proration really effective. The overproduction that has taken place during the last six months is convincing proof that the states acting separately cannot bring relief to the industry as a whole, and also that their efforts have not resulted in an effective control of oil production or in an increase in the price. The result has been exactly opposite. The step that will make interstate compacts effective is to give them the approval of Congress, so that they may operate uniformly.

Urges Interstate Compact

"Had this plan, which is now approved by the Oil States Advisory Committee, been in effect there is little doubt that conditions in the oil producing industry would have been stabilized, not only for its own benefit, but greatly to the advantage of the country as a whole.

"If the oil men will proceed diligently with a view to providing these interstate compacts it ought to be possible to secure Congressional action when the next Congress meets.

"At no time has the Federal Oil Conservation Board or the administration undertaken to dictate to the oil industry in respect to the problems that distinctly belong to it. The Government has confined its activities to its own oil reserve on the public domain, and merely by suggestion has endeavored to assist the industry to cure its troubles. If it had not stopped competitive drilling and production in the public domain the situation that now faces the oil industry would be much worse. The sources of oil in the public domain should be conserved for the period when they can be used most wisely.

"In brief, those of us in governmental responsibility have tried to protect the public interest, further the oil industry, prevent waste, stimulate unit operation and urge wise financial and engineering measures.

"The interstate compact plan should be studied seriously. If any one has a better plan he has not yet presented it. Something needs to be done. The alternative to following the lead of the Oil States Advisory Committee should be carefully looked over before its plan meets objection. I see much hope in it."

UNIT OPERATION IN EASTERN VENEZUELA

(Continued from Page 14)

contributes. Should any party desire to dispose of its interest, the remaining parties have the preferential right to purchase such interest on terms equal to any third party's bona fide offer.

"Each party has representation on a 'supervisory committee.'

"The powers and duties of the committee are: To select one of the parties to the agreement to serve as the operator who shall, under the supervision of the committee, manage the operation of the unit. The operator will serve for a specified term, but the committee has the power to remove and designate another operator; to prescribe the remuneration to be paid the operator for acting as such; to prescribe the location, type, capacity, etc., of pipe lines, tanks, etc., field facilities; the location of wells, method of drilling, depth and manner of producing wells; regulate production; prosecute and defend any litigation involving the properties or operations covered by the agreement; act as arbitrator of any disputes arising between the operator and any party to the agreement; and in general to suggest to and advise the operator as to general operation of the unit.

"The duty of the operator is to: Defray the cost of all operations out of the funds advanced by parties to the agreement in proportion to acreage held; employ personnel to conduct operations; supply parties to agreement with such reports of operations as specified by the committee; account for receipts and disbursements of funds; and in general to carry out all the functions of a manager. The operator is not, however, authorized to make any commitments or undertake any venture which would entail an expenditure of over a specified amount, without first obtaining approval of the committee.

"Each party to the agreement is entitled to take its respective share of oil produced, such share being in proportion to their interest in the pool. Should any party not desire to take its share of oil, provision is made for the disposal of same by sale or for the shortage of such oil at the expense of the party concerned.

"The terms of the agreements are generally for the life of the concessions comprising the pool."

GUY V. LEWIS DIES

FORT WORTH, Tex., Apr. 27.—Guy V. Lewis, independent operator and discoverer of Smith County's first producer, west of the Joiner Pool, died in Tyler, Tex., on April 22 of double pneumonia. Mr. Lewis was raised near the town of Tyler and had the pleasure of bringing the first oil well in in his home county.

RALPH DILDAY DIES

Ralph Dilday, 42, oil operator of Wichita Falls, Tex., died in Kansas City at the home of his parents on April 26. Mr. Dilday died after sudden illness developed while visiting his folks.

STANDARD METHOD FOR KNOCK TESTING

(Continued from Page 22)

cially designed to hold standard 8-ounce fuel sample bottles.

Scale for Reference Fuels

In developing a standard method of knock rating, chemically pure benzene, boiling range 173°-175° F. (this is preferable to commercial benzol) and a blend of selected straightrun gasolines (A.P.I. gravity 60.6, initial boiling point 120° F., 10 per cent point 182° F., 20 per cent point 215° F., 50 per cent point 286° F., 90 per cent point 390° F., end-point 421° F.) have been chosen as secondary or routine reference fuels; pure iso-octane (2, 2, 4-tri-methyl pentane) boiling range 205°-208° F., and pure normal heptane, boiling range 205°-206° F., have been chosen as primary or final reference fuels. Iso-octane, like benzene, is a good antiknock fuel, while normal heptane, like the zero reference fuel, is a hard knocking fuel.

Benzene was chosen as a reference fuel chiefly because of its exceptionally high

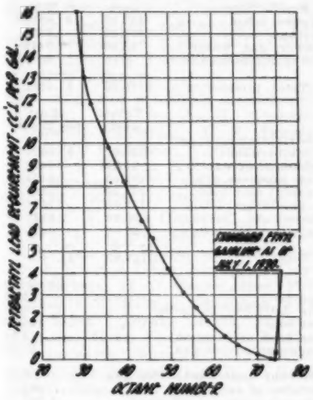


Figure 4 — Relationship between octane number and tetraethyl lead requirement.

antiknock value and the fact that it is easily obtainable in large quantities of even quality in the chemically pure state. Of almost equal importance as a reference fuel, however, is its use in comparison with high antiknock cracked gasolines as a blending agent. It has been found, that, even though benzene is the only fuel which will not detonate, some cracked gasolines will blend better than benzene when used in certain percentages. Consequently, since benzene (in this case commercial or 90° benzol) is used commercially, especially in Europe, as a blending agent it is often desired to learn the exact percentage of benzene which has the same effect as a knock suppressor as a high antiknock cracked gasoline when blended with the same base fuel.

In the selection of a zero reference fuel, a comparatively hard knocking fuel was chosen; it is a blend of Pennsylvania and Mount Pleasant straightrun gasolines. Such a reference fuel of low knock rating was chosen purposely so that benzene would have to be added to it in order to make it equal in antiknock value to the majority of fuels tested in this laboratory; otherwise benzene would have to be added to the fuel being tested until it equaled the zero reference fuel, thereby requiring considerably more time for rating.

The standard method of procedure for rating a fuel is to match it, by trial and error, with a blend of benzene and the zero reference straightrun gasoline blend; the per cent by volume of benzene in the blend matching the fuel is termed the "benzol equivalent" of the fuel. If, however, the antiknock value of the fuel being tested is lower than that of the zero reference fuel, its knock rating is expressed in terms of per cent by volume of benzene, in admixture with the fuel being tested, required to match the antiknock value of the zero reference fuel. This percentage of benzene, or "benzol equivalent," is expressed with a plus prefix or usually no prefix at all in the case of fuels rating better than the standard zero reference fuel, and a minus prefix for fuels rating below this standard.

The benzol equivalent rating is then converted to an octane number rating by means of a curve, Figure 2, which has been worked out by direct comparison of benzene blends and iso-octane-heptane mixtures on the knock-testing apparatus.

It should be noted, however, that in determining the tetraethyl lead requirement of a fuel to equal standard Ethyl Gasoline, the standard operating conditions and the standard method for making such a determination, as prescribed by the Ethyl Gasoline Corp., are utilized, with one exception. It has been found that the standard method for treating small samples of gasoline (200 cc's.) with dilute Ethyl fluid (this is usually a mixture of 8.26 per cent concentrated Ethyl fluid and 91.74 per cent c.p. benzene) does not give results which are exactly comparable to those obtained by treating large samples (1-gallon) with concentrated Ethyl fluid, when the tetraethyl lead requirement is greater than about 7 cc's. per gallon. As a typical example, a gallon of straightrun reference fuel used in this laboratory was found to require 16 cc's. of tetraethyl lead (25 cc's. of concentrated Ethyl fluid) to equal standard Ethyl Gasoline, while only 15 cc's of dilute Ethyl fluid (which is presumably the equivalent of 15 cc's. of tetraethyl lead per gallon) were necessary to be added to a 200 cc. sample to make it equal to this standard; furthermore, if a third method is used of making up to a 200 cc. sample instead of adding to a 200 cc. sample, 13.5 cc's. of dilute Ethyl fluid are required to equal standard Ethyl Gasoline. The reason for the lesser tetraethyl lead requirement when dilute Ethyl fluid is used is obvious; part of the base fuel has been replaced by c.p. benzene which constitutes the greater part of dilute Ethyl fluid. Consequently, in determining the tetraethyl lead requirement of a gasoline in this laboratory, concentrated Ethyl fluid is used when the requirement is greater than about 7 cc's. per gallon; when the requirement is less than this amount either one of the two dilute Ethyl fluid methods is used, preferably the method prescribed by the Ethyl Gasoline Corp. of adding the fluid to a 200 cc. sample.

For convenience, curves have been worked out by direct engine tests showing the relationship between either benzol equivalent, Figure 3, or octane number, Figure 4, and cc's. of tetraethyl lead per gallon required to equal standard Ethyl Gasoline (as of July 1, 1930). These curves do not hold absolutely true for all tetraethyl lead determinations. They do, however, give a fair relationship and serve as a guide when determining the amount of tetraethyl lead per gallon required by an unknown fuel to make it equal to standard Ethyl Gasoline; furthermore, they furnish approximate relationships at least between laboratories rating fuels in terms of octane number only, and those rating fuels in terms of tetraethyl lead requirement only.

As examples of the use of these curves, a fuel having a benzol equivalent rating of 72 would have an octane number rating of 90 and zero tetraethyl lead requirement, since it is considerably better in antiknock value than standard Ethyl Gasoline; a fuel equal to standard Ethyl Gasoline would have zero tetraethyl lead requirement and rate 74 octane number or 59 benzol equivalent; a fuel equal to the zero reference fuel, having a knock rating of zero benzol equivalent, would rate 29 octane number and have a tetraethyl lead requirement of 16 cc's. per gallon; while a fuel equal to normal heptane, having a knock rating of zero octane number, would have a benzol equivalent rating of — 38 and a tetraethyl lead requirement of considerably more than 40 cc's. per gallon.

It should be remembered, however, when converting knock ratings from one standard to another, that ratings in terms of benzol equivalent have no true meaning except where the local conditions are thoroughly known. The testing apparatus, operating conditions, and method of procedure used for matching a fuel with a benzene blend, together with the antiknock value of the zero reference fuel and the quality of the benzene used, play important parts in the benzol equivalent rating.

In studying the graphs shown in Figures 2, 3 and 4, it is interesting to note the shape of the curves between 0 and 18 benzol equivalent and between 18 and 36 benzol equivalent. The first 18 per cent of benzene seems to have comparatively little antiknock value on "Series 30" engine No. 44. Increasing the benzol equivalent 18 points, from 0 to 18, gives a corresponding increase of only 5 points on the octane number scale, while increasing the benzol equivalent from 18 to 36 gives a corresponding increase of 15 points on the octane number scale. By the same analogy, it is clearly seen that tetraethyl lead when used in large concentrations has very little effect as a knock suppressor; since 5.5 cc's. of tetraethyl lead are required to increase the octane number rating of a fuel 5 points from 29 to 34, while 2.2 cc's. are required to increase the rating another 5 points from 34 to 39, and finally 0.35 cc. is required to increase the rating 5 points from 69 to 74 octane number.

Standard Method for Testing

In developing a standard method of procedure for testing fuels on the modified "Series 30" Ethyl knock-testing apparatus, it was found necessary to adopt certain definite operating conditions; these are as follows:

1. Engine speed 600 r.p.m.
2. Cooling liquid 2,350 cc. distilled water.
3. Cooling liquid temperature 212° F.
4. Spark advance for maximum detonation.
5. Spark plug A.C. type G-6 or Champion type R-11.
6. Spark plug gap 0.025 inch.
7. Breaker points opening 0.015 inch.
8. Bouncing pin contact points opening 0.010 inch.
9. Valve tappet clearance 0.010 inch. (engine hot).
10. Compression pressure sufficient to produce a sharp even detonation of about the same intensity as would be obtained when operating on standard Ethyl Gasoline (as of July 1, 1930) at a compression pressure of 142-144 pounds per square inch and a spark advance of 15°; these conditions are prescribed as standard by the Ethyl Gasoline Corp.
11. Carburetor jet No. 70 drill size.
12. Fuel-air ratio which produces maximum detonation.
13. Crankcase oil 800 cc. paraffin base, Saybolt viscosity 120-125 at 210° F.

In setting the engine for use in testing, it is first operated on standard Ethyl

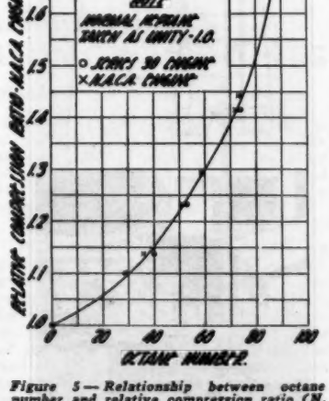


Figure 5 — Relationship between octane number and relative compression ratio (N. A.C.A. test engine).

Gasoline (as of July 1, 1930) at a compression pressure of 142-144 pounds per square inch gauge and a spark advance of 15°. After engine equilibrium has been established and the fuel-air ratio has been set for maximum detonation, the rheostat in the bouncing pin circuit is adjusted to give a knock-meter needle reading of approximately 70; this uniform intensity of detonation is used during all tests. However, when the engine is operated on a fuel which is lower in antiknock value than standard Ethyl Gasoline, it is necessary to lower the compression pressure to some point below 142-144 pounds per square inch gauge in order to maintain this desired uniform intensity. Conversely, if the engine is operated on a fuel which is better than standard Ethyl Gasoline, it is necessary to raise the compression pressure until the desired intensity of detonation is obtained. In each case, however, it should be remembered that an even detonation is desired even though the compression pressures described above have to be changed slightly; because, unless the knock-meter needle is quite steady, accurate results cannot be expected.

With the throttle thus set to give the proper compression pressure for the fuel being tested (unknown fuel), the spark advance and fuel-air ratio are adjusted to give maximum detonation.

The fuel-air ratio is adjusted by raising or lowering the level of fuel in the float bowl with respect to the carburetor jet until the point of maximum detonation is obtained, as indicated by the knock-meter needle. Extreme care must be taken that this adjustment is made correctly, since the particular fuel-air ratio giving maximum detonation is actually obtained in every day automobile performance. It is common knowledge that detonation in any engine, which has proper carburetor and ignition settings for the operating fuel, is most pronounced when the automobile is accelerated at wide open throttle; wide open throttle means maximum compression pressure. When the throttle is opened quickly, as is the case during acceleration, a properly designed carburetor supplies a very rich mixture of fuel and air, but after a short period of time the mixture becomes leaner. It is during this period of change from a rich to a leaner mixture that the carburetor produces the fuel-air ratio for maximum detonation; and the operator of the automobile derives his impression of the knocking properties of the fuel as a result of the intensity of the knock at this particular fuel-air ratio.

If, after the spark advance and fuel-air ratio have been adjusted for maximum detonation, the detonation has increased beyond the desired uniform intensity, the compression pressure is lowered, and the spark advance and fuel-air ratio properly readjusted.

The engine is then shifted from the unknown fuel to a known benzene blend by means of the three-way cock. The spark advance and fuel-air ratio are adjusted for this benzene blend, independent of the unknown fuel, until the point of maximum detonation is obtained. This procedure is repeated until by trial and error, a benzene blend is found which gives practically the same knock-meter needle reading as the unknown fuel. Blends containing from 0 to 78 per cent of benzene, in steps of 2 per cent are used, and it is sometimes necessary to interpolate to accurately determine the final rating of the fuel. As an example, if an unknown fuel gives a knock-meter reading of 65, a 60 per cent benzene blend gives a reading of 70, and a 62 per cent benzene blend gives a reading of 60, the actual rating of the fuel would be 61 benzol equivalent; this benzol equivalent would then be converted to an octane number rating of 76, by means of the octane number vs. benzol equivalent curve, Figure 2.

Unfortunately, it has been the experience of this laboratory that benzene blends and blends of iso-octane and normal heptane require a different degree of spark advance than the fuel with which they are matched; the amount of difference varies at different compression pressures. Consequently, with the compression pressure kept constant while the unknown fuel is being matched with a benzene blend, it is necessary to independently adjust the spark setting for both the blend and the unknown fuel; the benzene blend as a rule requires a lesser degree of spark advance than the unknown fuel. It is interesting to note that a blend of iso-octane and normal heptane requires almost the same degree of spark advance as its matched benzene blend. Typical examples showing this variation in spark setting, between unknown fuels and their matched benzene blends, or iso-octane-heptane blends (oc-

tane number), together with the compression pressures at which they were matched, are as follows:

Octane No.	Benzol equivalent	Comp. pressure lbs./sq. in.	Degree spark advance unknown fuel	Degree spark advance matched blend
87	70	185	17	11
77	62	160	15	10
64	51	140	13	9
55	42	130	10	8
49	35	125	8	7
29	0	118	7	7

It is interesting to note, however, that the difference between the benzol equivalent and octane number ratings of a fuel determined at a 15° spark advance and at the degree spark advance for maximum detonation is not great for fuels lower in antiknock value than standard Ethyl Gasoline. This difference increases with an increase in knock rating, and, if not regarded, will cause a considerable error in the determination; as an example, a fuel rating 59 benzol equivalent or 74 octane number and a fuel rating 73 benzol equivalent or 91 octane number with the proper spark advance for maximum detonation, would rate 58 and 71 benzol equivalent or 73 and 89 octane number respectively, with a 15° spark advance.

In this connection, however, it has been found that the effect of spark advance on the octane number or benzol equivalent rating of a fuel and even the relationships between several standards of knock rating as described in this paper, hold absolutely true only for modified "Series 30" Ethyl knock-testing apparatus No. 44. Slight differences can be expected even in engines of similar design and installation. In fact, another "Series 30" engine, No. 83, modified in the same way and used also in this laboratory for routine testing, requires a slightly different degree of spark advance for maximum knock with duplicate fuels. The relationship between benzol equivalent and octane number is also slightly different; however, the octane number rating of a given fuel is the same on both engines. Consequently, a separate relationship between the primary and secondary standard reference fuels should be determined independently for each knock-testing apparatus.

As mentioned before, the testing apparatus, operating conditions, method of procedure and reference fuels employed for rating fuels in this laboratory have been used with pleasing satisfaction for the past five months. That does not mean, however, that they will be used unchanged for another five months. It is the policy of this laboratory to make such changes from time to time which will permit closer checks with other reputable knock-testing laboratories, provided, of course, these changes will permit a closer correlation with actual automobile engine performance.

It is believed that a fixed compression ratio engine using a throttle for varying the compression pressure, will check closely with a variable compression ratio engine in which the compression pressure is varied by changing the compression ratio only. Recent comparative tests with a N.A.C.A. Universal test engine in the Automotive Laboratory of the University of Michigan showed close checks for a series of straightrun and cracked gasolines ranging in antiknock value from 29 to 89 octane number, notwithstanding the fact that widely different test engines and slightly different technique were employed. Indications are, however, that fuels rating below 55 octane number will rate slightly higher and that fuels rating above 85 octane number will rate slightly lower on the fixed compression ratio (7.75 to 1) modified "Series 30" engine.

The tests on the N.A.C.A. variable-compression ratio engine were made under the personal direction of Dr. George Granger Brown,[4] consulting chemical engineer and professor of chemical engineering, University of Michigan. In rating each fuel, the compression ratio at which detonation first occurred (known as incipient detonation) was taken as a measure of its antiknock value. The rating, however, was reported in terms of relative compression ratio and octane number. The relative compression ratio was obtained by dividing the compression ratio of the fuel tested by the compression ratio of normal heptane at the time of test (usually about 3.53 to 1), normal heptane being taken as unity. The octane number rating was obtained from a curve which had been worked out by direct comparison of compression ratios and iso-octane-heptane mixtures on the test engine.

Additional correlation tests are being planned with other variable compression ratio engines and also with a 1931 Buick eight-cylinder car with both the regular 4.5 to 1 compression ratio head and a supercompression ratio head; the results of these tests might show the necessity of using a lower compression ratio than (7.75 to 1) for rating fuels of low antiknock value and a higher compression ratio for rating fuels of exceptionally high antiknock value. Such changes can easily be made on the "Series 30" engine by means of shims placed between the cylinder and the crankcase.

[4]See The Oil & Gas Journal, January 9, 1930, p. 44.

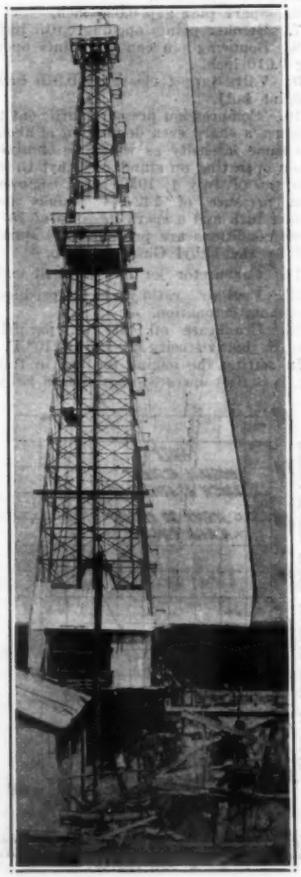
VERY UNUSUAL SETUP ON GULF COAST DEEP TEST

(Continued from Page 17)

substructure, which is of heavy steel, including the legs. As previously mentioned this substructure is 10 feet high placing the derrick floor, also of steel and concrete, that distance above the water level.

Good Drilling Record

An unusually good record has been set in drilling. The test was spudded on January 2 and at latest report it was drilling around 6,400 feet and with a 12¼-inch hole, the latter being a record in itself for the Gulf Coast. In the test so far are only 300 feet of 20-inch surface pipe and 1,946 feet of 13⅜-inch casing. The large engine, with a capacity of 13,000 pounds and 12,500 pounds in reverse, and flexibility of control, has enabled much saving of time in this test and at present is enabling the coming out of the hole in slightly over three hours with the round trip at five to five and one-half hours. This test, however, is drilling with a wire line bit, which eliminates many trips out of the hole with the drill stem and permits coring without pulling drill stem. On the other hand, drill stem is being pulled every 48 to 72 hours for inspection.



Humble Oil & Refining Co.'s No. 1 McFaddin, wildcat in southern Jefferson County, Texas, whose 164-foot derrick is the largest ever used on the Gulf Coast.

In addition to the extra large and heavy duty equipment for the test, modern features in safety operations also have been provided. Typical of these is the safety enclosed ladder on the derrick with interval landings. From this it is impossible for anyone to fall backwards and should one slip he would be able to drop only a few feet to a landing below.

This test is being drilled as a result of geophysical exploration which covered a block of better than 80,000 acres extending across almost the entire southern part of Jefferson County. The location for first drilling is in the H.&T.C. Survey No. 234, which is believed to have overlain the top of the prospect salt dome although no indications have been given so far to bear this out.

NORTH AND WEST TEXAS

(Continued from Page 43)

WEST TEXAS PRODUCTION
Week ending April 25

County—	Wells	Bbls.
Andrews	3	....
Crane	376	18,512
Crockett	51	1,608
Ector	77	7,246
Fisher	10	722
Garza	1	25
Howard-Glasscock	539	28,968
Irion	8	55
Jones	79	1,261
Loving	39	3,468
Mitchell	111	2,035
Pecos	542	72,533
Reagan	255	28,607
Runnels	5	104
Scurry	5	....
Upton	258	5,196
Taylor	3	64
Ward	56	3,613
Winkler	595	45,582
Total production this week		219,599
Total production last week		239,204
Decrease		19,605

NORTH TEXAS PRODUCTION
Week ending April 25

Panhandle District—	Bbls.
Carson County	4,295
Hutchinson County	8,253
Gray County	42,579
Moore County	1,883
Potter County	....
Wheeler County	250
Total production this week	57 260
Total production last week	55,670
Increase	1,590
Wichita Falls District—	
Archer County	11,480
Baylor County	504
Clay County	608
Cooke County	1,800
Foard County	45
Jack County	1,113
Haskell County	25
Montague County	3,596
Throckmorton County	337
Wilbarger County	10,090
Wichita County	18,696
Young County	13,158
Total production this week	61,502
Total production last week	61 606
Decrease	104
Ranger District—	
Brown County	3,574
Callahan County	3,410
Coleman County	1,688
Comanche County	690
Palo Pinto County	370
Eastland County	3,182
Shackelford County	3,833
Stephens County	4,533
Total production this week	21,280
Total production last week	20,362
Increase	918

STOP POSTING PRICES

SAN FRANCISCO, Calif., Apr. 28.—The Standard Oil Co. of California and several other distributors in this city and surrounding section have adopted a policy of not posting their gasoline retail prices at stations. This is being done, it is understood, in order to combat price cutters who for several months have been underselling the general market in this territory. Under the new plan the prices are being moved up and down in line with competitive conditions in the sections in which the stations are located.

DILUTED BUTANE UNITS OPERATE AT LOW COST

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down. When the high pressure storage is full, the compressor is again put on the automatic and valves changed to connect it to the working storage tank.

"This plant has functioned 100 per cent on the automatic from the day it was put in service. It is laid out to serve 700 ultimate customers. The total cost of the plant was $23,234.93. The cost of the distribution mains was $29,784.79. To date there are only 160 customers using gas. The cost of service meters and governors was $14,117.27. The cost of distribution system per ultimate customer was $62.72. There are 700 meters and governors purchased but not installed included in the $14,117.27 charge to service, meters and governors."

In summary a detailed record of costs and expenses was shown in tabular form as included below and was presented as actual for the Cleveland plant.

OPERATING COSTS, CLEVELAND GAS CO.
(December, 1930, operations)

Production—	Total cost	Cost per M made
Works labor	$50.00	$ .0516
Butane	371.00	.3834
Power, gas, water	43.46	.0449
Plant maintenance	6.00	.0062
Total production	$470.46	$ .4862

	Total cost	Cost per M sold
Distribution oper. and maintenance	$39.07	$ .0477
Commercial exp.	35.75	.0436
New business exp.	199.53	.2434
General and misc.	262.32	.3200
Depreciation	132.60	.1618
Taxes	93.10	.1136
Uncollectable bills	35.00	.0427
Total	$1,267.83	$1.5467

	Cubic feet
Gas made	967,600
Gas delivered to mains	966,300
Gas sold	819,700
Gas used by company	68,900
Unaccounted for gas	57,700
Per cent unaccounted for gas	5.97
Number of consumers	481
Average sales per consumer	1,702

Gas rate in use first 200 cu. ft. per month	$1.75
Next 1,800 cu. ft. per month at per M	1.25
Excess of 2,000 cu. ft. per month at per M	1.00

OIL ELECTRICAL MEETING

ST. LOUIS, Mo., Apr. 25.—A. J. Malcon, Dallas, Tex., was elected president of the Petroleum Industry Electrical Association at a meeting of the board of directors here. R. M. Bayless, Houston, Tex., was elected vice president.

The association is composed of 20 of the major oil, gas and pipe line companies, represented by the heads of the telephone, telegraph and electrical departments.

Tulsa was represented by F. H. Groves, the Pure Pipe Line Co., and L. M. Gullesen, the Prairie Pipe Line Co.

The 1930 officers of the association were F. S. Leonard, Shell Pipe Line Corp., St. Louis, Mo., president; A. J. Malcon, Magnolia Pipe Line Co., Dallas, Tex., vice president; C. E. Foster, Oklahoma Pipe Line Co., Muskogee, second vice president, and H. E. Browne, Prairie Pipe Line Co., Independence, Kans., secretary-treasurer.

The directors voted $100 to buy a wrist watch for Mr. Browne, who has served the association for three years as secretary.

CUT COLOMBIAN OIL OUTPUT

BOGOTA, Colombia, Apr. 27.—Colombia's oil production for the next three months will be only 90 per cent of the present amount, in accordance with an order delivered to the local office of Tropical Oil Co. from the head office. At present the Tropical is the only oil producer operating in Colombia.

Average monthly output in the past has been approximately 1,800,000 bbls. It is understood here that the order results from an agreement between certain American oil companies to reduce overproduction. The local office was not informed whether the order will be continued after the three months' period.

I.P.A. Makes Plans for Coming Year

Campaign for Tariff on Oil Will Be Carried on During Congressional Recess. Officers Re-elected

By W. A. Spinney

The second annual convention of the Independent Petroleum Association was held in Tulsa at the Mayo Hotel April 23 and 24. Plans were launched for the coming year for the continued fight for a tariff on foreign oil. The establishment of headquarters in Washington, D. C., for the duration of the campaign to obtain a tariff on crude oil and refined products was unanimously voted at the meeting.

The officers of the association were re-elected, Wirt Franklin, of Ardmore and Oklahoma City, president; Harold B. Fell, of Ardmore, assistant to the president; Russell B. Brown, of Tulsa, counsel; Orville Bullington, Wichita Falls, executive vice president; Dudley C. Monk, of Tulsa, secretary and manager. The executive committee is composed of Paul S. Ache, James G. Cloud and George A. Dye, all of Tulsa.

New state vice presidents elected were as follows: Arkansas, Joe K. Mahoney, El Dorado; California, J. R. Dorsey, Bakersfield; Colorado, Warwick Downing, Denver; Illinois, William Bell, Robinson; Kansas, A. D. Allison, Wichita; Kentucky, Paul G. Blazer, Ashland; Louisiana, W. Scott Heywood, Jennings; Montana, C. J. Dousman, Baker; New Mexico, Van S. Welch, Artesia; New York, J. Edward Jones, New York City; North Dakota, H. C. Schumacher, Fargo; Ohio, I. C. Grimm; Oklahoma, Paul Ache, Tulsa; Texas, Marrs McLean, Beaumont; West Virginia, W. S. Hallian, Charleston; Wyoming, Ray Phebus, Thermopolis; Pennsylvania, W. J. Brundred, Oil City.

Board of Directors

The new directors announced were as follows: Arkansas, T. H. Burton, C. E. Murdock, J. W. Olvey, all of El Dorado, and J. D. Reynolds, Camden; California, Vern Dumas and J. R. Dorsey, of Bakersfield, and R. A. Broonfield, A. T. Jergins and Woodley Phillips, all of Los Angeles; Colorado, W. B. Downing, D. D. Potter, Charles Orchard and Dr. A. W. Green, all of Denver; Kansas, Arthur Denman, Sedan; Harry Garden, Augusta; A. M. Landon, Independence; A. S. Ritchie, E. B. Shawver, Ralph Pryor, Wichita, and Arthur Brewer, of Winfield; Montana, William Fulton, Conrad; New Mexico, C. J. Dexter, William Dooley, Artesia; George Etz, Harry Leonard, W. A. Nichols, Max Call, of Roswell; New York, George Bradley, Bolivar; Harry Bradley, Wellsville; C. H. Hamilton, Ripley; Oklahoma, A. Danciger, James G. Cloud, George A. Dye, Pat Malloy, E. L. Mayes, H. F. Wilcox, Dudley Monk, James A. Gardner, Fred Capshaw, R. J. St. Germain, Fred C. Cook, Earl Sneed, Warren Churchill, Foster B. Parriott, all of Tulsa; C. E. Burlingame, Bartlesville; Frank Buttram, W. R. Ramsey, of Oklahoma City; J. I. Cromwell, Muskogee; H. B. Fell, Wirt Franklin, F. E. Tucker, Ardmore; B. A. LaSalle, Frank Fleet of Ada; J. B. Milam, Chelsea; J. B. Cowden, Knox Garvin, Duncan; Joe Ray, Chickasha; Harry Diamond, Holdenville; R. D. Pine, Okmulgee; Peyton Brown, Ponca City; T. T. Eason, Enid; R. C. Jones, Cushing; Louisiana, W. C. Feasel, Monroe; Pennsylvania, E. M. Mudge, J. C. Trees, Henry Witner, John Leonard, Pittsburgh; Forest Dorn, Ralph Zook, Bradford; Rodney Alexander, Oil City; Vernon Taylor, Indiana; Texas, E. G. Bedford, Midland; Tom Cranfill, Dallas; Joe Danciger, S. D. McIlroy, W. H. Fuqua, Amarillo; O. W. Killam, George R. Marshall, Laredo; Clifford Mooers, Tom Hunter, Orville Bullington, Wichita Falls; Marrs McLean, Beaumont; Claude Witherspoon, Frank Kistler, Harry Pennington, San Antonio; Edward Landreth, Travis Golay, Fort Worth; E. F. Robbins, Big Springs; Carl Estes and Earl Galloway, Tyler; Wyoming, Paul Greaver, C. F. Ferdig, Cody; Missouri, M. K. Hughes, S. A. Buder, Harry Ezzell, St. Louis; Charles W. Fear, Jefferson City; Kentucky, Courtney Combs, Julias Z. Miller, Owensboro; W. H. Seltzer, Ashland; Indiana, Colonel Ayers, Muncie, and Gilbert Gamble, Terre Haute.

Washington Headquarters

Wirt Franklin, president of the association, after a conference with the directors announced that Washington, D. C., would be headquarters from which the tariff campaign would be directed. Russell Brown will be in charge of the office in Washington and Dudley C. Monk will be in charge of the association's headquarters in Tulsa.

President Wirt Franklin opened the convention with an address in which he reviewed the work of the association since its organization, particularly in regard to its efforts to obtain a tariff on oil and its products. He urged that the association's campaign be put under way at once so that the recess period could be made use of in carrying on a campaign of education among members of both houses of Congress. Mr. Franklin reviewed the present serious state of the oil industry and deplored price cutting both in the crude and refined branches of the business and urged upon oil producers that they refuse to sell their oil below the highest posted prices for crude.

Mr. Franklin praised the Federal Oil Conservation Board, Oil States Advisory Committee, American Petroleum Institute, Mid-Continent Oil and Gas Association and other associations for their work on behalf of the industry in the past year.

Congressman T. D. McKeown and F. B. Swank of Oklahoma; L. A. Millspaugh of Winfield, Kans., and Pat Malloy of Tulsa, were heard in addresses.

James G. Cloud, president of the Oklahoma division of the association said that a budget of $120,000 would be required to carry on the association's program this year and he pledged Oklahoma to supply $36,000 of this amount.

E. B. Reeser, president of the American Petroleum Institute, spoke on "Co-operation in the Oil Industry." The speaker began by saying that at present only 95 per cent of the industry was willing to co-operate and that the other 5 per cent was busily engaged in dictating how the 95 per cent should act. Mr. Reeser urged producers not to sell their crude oil to price cutters, but to demand the highest posted price. Mr. Reeser reviewed the current conditions in the oil business and called attention to the success of the committees on relief in the stripper oil areas in Kansas and Oklahoma in obtaining new markets for the crude left without a market at the beginning of the year. Mr. Reeser recommended unitization as a preventive of overproduction.

The Resolutions

The resolutions passed by the association at the Friday session, were as follows:

"Whereas, the oil industry of America is now in a state of chaos—there was oil imported into the United States last year from foreign countries which displaced on our market at least $175,000,000 worth of our oil, causing unemployment of approximately 300,000 oil field group workers of an approximate per day wage earning of $2,000,000. The importation of oil has reduced our money returns for this commodity by more than $2,000,000 per day; that by the same cause, the farmers of our producing states have lost yearly in the way of rentals, bonuses and royalty, many millions of dollars.

"The conditions brought about by this importation of oil free of duty has demoralized this great industry and seriously threatens the whole financial structure of our country. The distress of the oil industry, its loss of money circulation, its crippled buying power has reflected itself in every industry, whether mill or factory. Its lost buying power has pulled from employment the wage earners of every industry and is, we believe, responsible for more than 50 per cent of the present depression.

"In our fight for a tariff on oil, we have had friendly counsel and assistance from men high in office, including federal officials, certain members of the Federal Conservation Board, the Oil States Advisory Committee, members of the United States Senate, House of Congress and governors of the several oil producing states; which representatives of the people have ably and wisely assisted us in our effort to procure for the oil industry a just and equitable protection.

"We are grateful to those members of the Federal Conservation Board, the Oil States Advisory Committee and the governors of the several oil producing states for their efforts in procuring a reduction on imports of oil. We implore these agents to insist upon further drastic curtailment of imports, that the importers may do equitably with American producers. We deem it unfair that these imports should be reduced only upon a basis of the total production of the United States. Our marginal or stripper wells cannot be prorated. If they were, millions of barrels of valuable oil reserves would be lost. The large flush fields of our country must carry the necessary curtailment of American production. We, therefore, suggest that the basis of curtailment of foreign oil be on a basis of the curtailment of our large flush fields. We implore these agencies to lend their earnest assistance at the next Congress of the United States to fix a tariff on foreign oil, in at least the amount found by the Tariff Commission to be the difference between the cost of production and the transportation of Mid-Continent oil to the Atlantic Seaboard and that of foreign producing fields.

"We are grateful to the members of the American Petroleum Institute and of the Mid-Continent Oil and Gas Association, all chambers of commerce of all states and cities, and others who have assisted us in our efforts for protection of this industry. We trust that these agencies see the necessity of preserving this and all other basic industries of our country, for the preservation of our financial structure.

"We commend the republican members of Congress from the State of Kansas in their action in declining to participate in the republican caucus of the House of Congress during the last days of its session. We believe that this action by these congressmen will better insure the states south of the Ohio River and west of the Mississippi River equal protection with those of the industrial East.

"We believe that the sale of crude oil below the posted prices or below the cost of production is a menace to the oil industry and to the general welfare of the United States. We implore all producers of oil to refuse to sell oil below the accepted posted price or to sell it in excess of the market demand. The sale of gasoline by refiners at a price less than it can be profitably refined from oil purchased at the accepted posted price and sold at a profit, is likewise a serious menace to the industry. We implore all refiners of gasoline to refuse to sell their products at such nonprofitable prices.

Respectfully submitted,

A. S. Ritchie, chairman,
H. B. Fell,
Earl Sneed,
T. F. Hunter,
H. B. Garden,
Resolutions Committee."

The convention closed with a banquet in the Mayo Hotel in the course of which a gridiron skit was staged. It was called "Solving the Oil Problem," and notables in the oil world were good naturedly burlesqued, the playlet ending with the refusal of the Russian Soviet refusing to take over the American oil business if it was obliged to operate it under the laws of the United States.

CARBON BLACK MANUFACTURERS FEEL COMPETITION OF PIPE LINES

By A. E. Mockler

PHILADELPHIA, Pa., Apr. 27.—Refinements in manufacturing operations by carbon black consumers have forced producers of that material to materially diversify their technical operations in carbon black manufacture, said D. F. Cranor and L. J. Venute of the service and control department of the Binney & Smith Co., New York., in a joint paper presented before a meeting of the Paint and Varnish Superintendent's Club of the Philadelphia district at a meeting here.

Extensive development of natural gas pipe lines, the paper pointed out, has forced carbon black manufacturers in many instances to transfer their operations to more remote gas fields, not yet tapped by pipe lines to large consuming centers, and has spurred the search for new sources of low cost natural gas which can be made available to the carbon black industry.

The paper, which presents an interesting outline of the carbon black industry from its earliest days down to the present, where laboratory research plays an important part in the industry, follows:

Carbon black was first made on a commercial scale at Cumberland, W. Va., in 1872, this initial production selling at $2.50 to $5 per pound. At that time, it was used for printing inks only; but, as manufacture increased, its use was rapidly extended to paint and many other industrial lines, and the year 1910 marked the discovery of the value of black as a rubber reinforcing agent.

Pipe Line Competition

We must prospect for and develop our gas. In the Louisiana field high pressure natural gas has been used for the manufacture of black, but this now finds its greatest use in pipe lines leading to St. Louis, New Orleans and other cities of the Southwest. Since this newer use had developed, the black industry has largely moved to the Texas Panhandle, where the low pressure casinghead gas, which occurs with crude oil in that field, is now generally employed. If not so used, this gas could only be blown into the air and wasted.

Collecting lines, in many cases running through forests and swamps and under rivers and bayous, bring gas from the wells to producing centers. In order to conserve natural resources, the gasoline present in natural gas is extracted before turning the latter into pipe lines, or burning it to make carbon black.

Black is produced by the impingement of millions of small flames playing upon

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ATTORNEY GENERAL AGAIN EXPLAINS HIS ATTITUDE

(Continued from Page 103)

the part of the commission toward such associations. As I understand it, the action of the department and the commission is directed at putting a stop to trade association practices claimed to be in accordance with rules approved by a public authority, but which in fact go beyond anything which any governmental agency has accepted as lawful.

"The principal cause of depressed business conditions has been world-wide overproduction. The greatest difficulty in readjusting this has been in those industries connected with natural resources, such as oils and other minerals, and lumber. The gradual readjustment by individual effort based on self-interest is too slow a process to satisfy the industries involved and suggestions are made for concerted action and combinations to reduce production and importation of these commodities.

"Any such combinations having the direct effect of restricting production and limiting the supply of commodities in interstate and foreign commerce, and the effect of indirectly but inevitably raising the prices for such commodities, have heretofore been generally thought to violate the antitrust laws, but arguments have been advanced that waste of natural resources is resulting from this overproduction and that element is urged as introducing into the situation a justification for action which otherwise would be unlawful.

"Some of the interests involved have not been pleased at the lack of enthusiasm in the Department of Justice for these proposals. I recently read one statement that the department was not showing 'constructive co-operation' in these matters. By constructive co-operation I suppose was meant a usurpation by the attorney general of an authority not granted him by law, to decide that for the time being, and during the present emergency, the enforcement of the antitrust laws is not in the public interest.

"One specific suggestion for amendment of antitrust laws has been that the Federal Trade Commission be authorized to consider proposed contracts or mergers and advise business men in advance whether the proposals would violate the law, and that a favorable decision by the commission should operate to protect the business men from criminal prosecution and possibly be received as prima facie evidence in a civil suit attacking the arrangement under the antitrust laws.

"I know of no serious objection to trying such an arrangement, but I am indifferent to it because my experience in the Department of Justice leads me to doubt whether it will accomplish what is expected. As matters stand now, business men who submit proposals in advance to the trade commission or to the Department of Justice find out whether their proposals are likely to be the subject of attack by the Government, and, so far as I know, no criminal prosecution under the antitrust laws has ever been instituted where the men involved had any reasonable ground to contend that what they did received any previous indorsement or approval or was even acquiesced in by these government agencies.

"Sometimes prosecutions have been threatened in situations, some aspects of which had previously been presented to these government agencies, but only where it appeared that the persons involved have been acting in bad faith, or have gone beyond any proposal disclosed to these departments. My notion is that if the proposal for the Federal Trade Commission to consider these matters in advance and give advisory opinion were put into practice under an amendment to the law, questions would be continually arising whether the things actually done went beyond the proposal submitted and the criminal prosecutions would be, as they are today, not for anything frankly disclosed in advance, but for matters developed subsequently.

"From this point of view, the efficiency of the proposal to have such advisory opinions in advance is, to say the least, doubtful. Proposals which go beyond this and which plan that an administrative or executive agency shall be the judge as to whether a proposed transaction is or is not against the public interest, involve a delegation of legislative authority which would have to be considered."

ENGLISH COMBINE TO RAISE IMPORT DUTY

(Continued from Page 103)

ect of supplying higher cost oil to British consumers is more or less a case of "robbing Peter to pay Paul," British labor will be the gainers in the operation, and this factor largely offsets some of the more uneconomic phases of the scheme.

According to London reports, the hydrogenation scheme proposed by the labor government will receive the full support of Philip Snowden, chancellor of the exchequer. The chancellor, it is said, has indicated that in his forthcoming budget protection for the infant hydrogenation industry will be provided for by an increase in the present tax of 8 cents per gallon on gasoline to 12 cents. Gasoline made from coal in Great Britain will remain untaxed.

The chancellor's plan further threatens American exports of gasoline to Great Britain by providing that gasoline refined in Great Britain from crude oil will receive a preference of 4 cents per gallon under the proposed new tax measure, thus giving British made gasoline an "edge" of 4 cents per gallon over imported motor fuels. This provision, it is believed, will greatly stimulate the refining industry in Great Britain and will result not only in the restoration of capacity operations by the British refining industry but will probably bring about an increase in the British refining capacity as well, all of which will benefit British labor.

The proposed steps to foster hydrogenation of oil from coal in Great Britain will not only restrict American exports of refined products to Great Britain, but will likewise substantially affect the marketing operations of Rumanian and Russian refiners, notably the latter. Should the British hydrogenation plan go through as scheduled both Rumania and Russia will be compelled to seek other markets for much of their gasoline output, with a resultant intensification of the already drastic price competition now existing in world oil markets.

It is reported that the plans of the labor government for the introduction of hydrogenation of oil from coal have progressed to the point where immediate action is possible, and it is thought the government will present its plan to the British parliament within a few weeks, calling for the creation of a company to conduct the operation and for the appropriation of the necessary government funds to underwrite the project.

PHILLIPS PETROLEUM DIRECTORS RE-ELECTED

The directors of the Phillips Petroleum Co. were re-elected at the annual meeting of the stockholders of the company at Bartlesville, Okla., and the old board of officers were re-elected.

The directors and officers are as follows: H. M. Addinsell, New York City; Clyde Alexander, vice president; William N. Davis, vice president; Eugene E. du Pont, Wilmington, Del.; E. P. Earle, New York City; H. W. Farnum, Chicago; R. H. Higgins, New York City; R. H. Hudson, general attorney; J. L. Johnston, New York City; John H. Kane, executive vice president; H. E. Koopman, vice president; Charles A. Kemp, St. Louis, Mo.; E. E. Loomis, New York City; Samuel McRoberts, New York City; John Markle, New York City; Frank Phillips, president; John G. Phillips, Bartlesville; L. E. Phillips, chairman executive committee; W. C. Smooth, Bartlesville, Okla.; O. K. Wing, secretary-treasurer.

President Phillips announced that the statement of earnings in the first quarter of 1931 will be issued next week.

COMPETITION OF CARBON BLACK MANUFACTURERS

(Continued from Page 109)

hundreds of miles of channel surfaces, these lazy, luminous flames depositing a jet-black pigment of submicroscopic fineness. The mechanism employed for deposition and collecting consists of a moving table or channel irons equipped with scrapers placed over V-shaped hoppers, which drop the product into a screw conveyer. This apparatus is enclosed in sheet-iron burner houses designed for the close control of drafting operations.

After refining and air treatment, the black is double-bolted through fine screens as an extra safeguard, and is then collected in large hopper-shaped agitating tanks where excess air is largely removed and thorough blending is effected.

Higher Yield, Lower Quality

One of the old laws, long since established in the manufacture of black, is that "the higher the yield, the lower is the resulting quality." The high color paint blacks all follow this general rule and require much more of natural gas for each pound of product than is the case with the ordinary grades. Quality and cost are governed directly by considerations of yield, rate of production and special supervision.

Quality control begins with study of the gas itself, which is analyzed and carefully regulated at each producing unit. Temperature, pressure and drafting all have their individual effect upon quality; and pyrometers, pressure gauges and CO_2 recorders are familiar instruments in daily use in the plants producing Binney & Smith blacks.

Laboratory procedures are modeled after the performance tests of the paint, ink and rubber industries, and every plant operating in the manufacture of the specialty grades is equipped with an individual factory laboratory which performs rapid control tests, additional to the searching examinations regularly carried out in the central control laboratory in each producing field. The final grading and quality control is in the hands of a technical service staff working in close touch with the consuming trades and with the sales and research departments.

The following properties as possessed by various types of carbon black determine their specific use in industry:

1. Color.
2. Strength.
3. Oil absorption.
4. Undertone and top tone.
5. Wettability.
6. Flow, in long type varnish.
7. Grinding properties.
8. Viscosity imparted to finished product.

The color interests the paint and lacquer compounder especially. This characteristic is roughly divided into three classes:

1. High color blacks, such as super spectra, used in high-grade varnish enamels and lacquers.
2. Medium high color are used for high-grade paints and some varnishes.
3. Ordinary color for paints, such as house paint, structural steel work and others.

General Properties

It is a general rule that the higher the color, the greater the oil absorption of the black; the lower the color, the lower the oil absorption.

The higher color carbon blacks sometimes show less covering power than the lower color; this, however, is not a general rule.

All carbon blacks, with one or two exceptions, have the reddish-brown undertone and are not used for tinting. Molacco black and some lampblacks are used for this purpose.

Some carbon blacks wet more easily with certain vehicles than others, this, of course, being independent of oil absorption. However, easy wettability must not be confused with easy grinding; since, although a black might wet easily, it might also be extremely difficult to grind. Then, too, a black that does not wet as easily as another may more quickly give a smoother grind.

Peerless black and one or two other grades, to a smaller extent, have the property of flow in a lithographic type of varnish. By this, we mean if the same proportions of a common carbon black and flow black are mixed in lithographic varnish, ground thoroughly and each placed on an incline plane, the flow black will flow down the incline in the form of a ribbon, while the ordinary carbon black will stay in the same place as a stiff, buttery mass.

The higher the color of the black, the more difficult it is to grind. This is a generally consistent property. A not uncommon mistake is the direct substitution of a black of higher color and oil absorption for one of less intense color and lower oil absorption. This, naturally, will give rise to difficulties, since the ration of oil will be off balance and a poor grind will result. There are several causes for this, the principal one being the change in viscosity.

The paint technologist should bear in mind that there are blacks for each specific purpose and that color and oil absorption must always be kept in mind when considering grinding properties.

OIL MAN'S CALENDAR

MAY

4—Austin, Tex., Texas Oil Conservation Committee Conference of State Representatives.

4-9—Charlotte, N. C., Good Roads Convention.

6-7—Indianapolis, Ind., Indiana Petroleum Association, Severn Hotel.

11-12—Dallas, Tex., Annual Convention, National Oil Scouts' Association.

11-14—Memphis, Tenn., Natural Gas Department, American Gas Association.

14-15—New Orleans, La., American Oil Chemists Society.

19-21—Tulsa, Okla., Natural Gasoline Association of America, Mayo Hotel.

27-29—New York, National Foreign Trade Council.

28—Warren, Pa., National Petroleum Association, Fire and Safety Marshals.

JUNE

2-5—Washington, D. C., 24th National Conference on Weights and Measures, Bureau of Standards.

3-4—A.P.I. Division of Production, Baker Hotel, Dallas, Tex.

5—Fort Worth, Tex., A.P.I. Board of Directors, Texas Hotel.

8-11—Toronto, Canada, National Association of Purchasing Agents, Royal York Hotel.

10-12—Swampscott, Mass., American Institute of Chemical Engineers.

15-18—Madison, Wis., fourth annual oil and gas power meeting, American Society of Mechanical Engineers.

15-19—White Sulphur Springs, W. Va., Summer Meeting, Society of Automotive Engineers.

22-26—Chicago, Annual Meeting, American Society for Testing Materials.

SEPTEMBER

1-3—Cleveland, Ohio, 20th National Aeronautic Meeting, Society of Automotive Engineers.

16-18—Atlantic City, N. J., Annual Meeting, National Petroleum Association, Hotel Traymore.

OCTOBER

2-3—Houston, Tex., Petroleum Division, American Institute of Mining and Metallurgical Engineers.

12-16—Chicago, National Safety Council.

NOVEMBER

10-12—Chicago, Twelfth Annual Meeting, American Petroleum Institute, Stevens Hotel.

16-21—Pittsburgh, Pa., Third International Conference on Bituminous Coal, Carnegie Institute.

DECEMBER

28-31—Tulsa, Geological Society of America, Mayo Hotel.

Oklahoma U Students Hear Practical Talks On Oil Operations

By L. G. E. Bignell
Petroleum Engineering Editor

NORMAN, Okla., Apr. 25.—The student branch of the American Institute of Mining and Metallurgical Engineers of the University of Oklahoma held its annual open meeting with about 75 members and guests in attendance and presented a very interesting program made up of three papers.

The first discussion of "Recovery Methods for the Oklahoma City Field" was given by Herbert F. Beardmore, of the Indian Territory Illuminating Oil Co. in which he outlined the great variety of producing conditions that have been encountered in this pool due to the difference in wells producing from the lime and sand areas. Some wells have large gas and small oil volumes and others are just the reverse, so that the whole range of producing conditions are encountered, he said, and up to this time they have all been quite successfully handled.

Mr. Beardmore said that in the top of the lime structures there was more gas than oil when the wells were first finished and in the sand wells there has also been high gas-oil ratios in the upper part of the formation, while the wells further down dip have had more nearly normal gas-oil ratios.

Wells have varied in size over a wide range the maximum being about 72,000 bbls. of oil per day, he continued. This was a well producing from the sand. It is reported that two of the lime wells have made over 1,000,000 bbls. of oil to date but that area on the whole is about depleted of its productive oil as it is now making an excessive amount of water per barrel of oil recovered.

The lime wells have flowed naturally but in some of them it has been necessary to run tubing, Mr. Beardmore said, and to do this the Otis method has been used in most instances. Tubing has helped the recovery and the use of beans both at the bottom of the hole and at the top of the tubing has had its effect upon ultimate recovery by natural flow means. Some have been produced by gas lift.

In testing these wells for potential it is customary to produce them through both tubing and casing, said the speaker, adding that if they are produced too long in this manner, however, water will increase appreciably in the lime area so it is not desirable to take potentials at frequent intervals.

Mr. Beardmore outlined the several methods of producing wells when the natural flowing pressures have fallen so low that the oil will no longer flow to the surface without mechanical aid.

Following Mr. Beardmore's address Clyde M. Becker, geologist of Chickasha, Okla., presented a very carefully thought out paper on "A Genetic Study of the Folding in Southwestern Oklahoma and North Central Texas" which was accompanied by maps and cross sections of the area under consideration and gave some very interesting facts about its geology.

The third speaker of the afternoon was Leonard M. Logan, of the University of Oklahoma, who presented a paper on "Economic Aspects of Stabilization of the Petroleum Industry."

RETAIL CONDITIONS DISTURBING MARKETS

(Continued from Page 12)

the refined market end lies in the fact that in eliminating the retail price-cutter, the smaller refiners will lose a large part of their spot business. The bulk of the spot business placed from day to day with Mid-Continent refiners over the past year, has come from jobbers operating stations which have sold under the general market. The older jobbing concerns for the most part have had contracts with refinery sources of supply and their spot purchases were not important.

With this cut-rate business already on the decline, several refiners will have the problem of finding new outlets for their gasoline. Temporarily at least this will tend to prevent a recovery in spot prices on which most contracts are based. Just what the final results of this change in conditions will be remains to be seen. Should the third-grade plan be finally adopted by most of the large distributors, it is pointed out that several of them may find it expedient to purchase the requirements for this class of their retail trade from small refiners. An indication of how this changed retail situation may effect gallonage is apparent from the plans of one company which has increased its estimate of probable gallonage 20 per cent for the summer months due to the fact that with a third grade it will get gallonage which otherwise would have gone to tank car stations and other stations.

Gasoline and Naphtha

With a new month starting on Friday, sellers are hoping that May will bring some recovery in the gasoline market. It is freely predicted that prices on the U. S. Motor grade will not go below 3 cents which was the low of resale quotations the past week. Placing East Texas on a proration basis as now planned will eliminate some of the cheap crude oil supplies and make possible a better feeling in regard to the summer market.

The general price range on the U. S. Motor grade is 3⅛ to 3¾ cents with several of the larger refiners quoting 3¾ to 3½ cents. As previously indicated, inquiries for spot shipment have been slow due in part to the fact that some of the cut-rate jobbers who have been buying as much as 60 cars a month have had their gallonage reduced due to the retail prices of the large distributors.

It is predicted that the third grade in the retail end will increase the demand for a regular grade which will closely approximate the present 60-62 400 endpoint grade. Refiners or jobbers selling U. S. Motor gasoline as a third grade will want a better product for their regular retail grade. The Standard of Indiana has improved its regular white grade since the adoption of the "Stanolind Blue" and other companies are selling a 400 to 420 endpoint. Usually these grades are much above the average in antiknock rating.

Should this situation continue, it is believed that it would result in the establishment of a second domestic grade which would be actively traded selling slightly higher than the U. S. Motor grade. Antiknock rating probably would be as important in determining the price as the distillation range. At present there is a fair demand for the 60-62 400 endpoint grade and with a knock rating above the average, most refiners have no difficulty in securing at least one-fourth cent above U. S. Motor in their spot sales.

The 390 and 375 endpoint grades are moving slowly and in forced sales bring very little above the U. S. Motor grade.

There are more inquiries for blending naphthas. Most refiners do not make them but if the demand continues to improve it is probable that several refiners will change their operation to make them available to their customers. The bulk of the demand is coming from jobbers who are also buying natural gasoline, giving them a blended motor fuel which is under 3 cents basis Group 3.

Other Products

No important developments were reported in other products in Oklahoma. A U.G.I. gas oil has sold as low as 1 cent a gallon in Oklahoma, although the general price range is 1⅛ to 1¼ cents. The low cold tests have also slumped to a low of 1½ cents. The best grades of distillates suitable for furnace oil or tractor fuel are available at a low of 2 cents. The tractor fuels generally are prime white with a flash under 175.

There is very little demand for the regular grades of fuel oils in Oklahoma. Fortunately the output in excess of contracts is not large except for the high cold test grades coming largely from plants in the Oklahoma City Field. Price ranges are the same as last week.

There is a better demand for the finished motor oils and some grades of neutral oils and bright stocks are also more active. Price ranges are unchanged. Petroleum wax is not active and the 124-126 grade is available under 2 cents.

H. M. RUNKLE HEADS INTERNATIONAL-STACEY

Harry M. Runkle, who becomes president and general manager of the International-Stacey Corp., formed by the merging of the International Derrick & Equipment Co. and the Stacey Engineering Co., was born in St. Paris, Ohio, June 6, 1889, and was educated in the public schools of Columbus, Ohio, and the Ohio State University, where he won the degrees of bachelor of arts and bachelor of laws.

Harry M. Runkle

Mr. Runkle was formerly attorney for the American Rolling Mill Co., the Columbus Railroad, Power & Light Co. and the Ohio Electric Railways Co. and was associate counsel for the Baltimore & Ohio Railroad and the Norfolk & Western Railroad for 11 years. He retired from the practice of law in 1919 and entered on a business career which has been most successful, serving as vice president and secretary of the International Steel Products Co., the International Derrick & Equipment Co., the Republic Fuming & Refining Co., the American Metal & Mining Products Co., and as secretary and treasurer of the Eastern Hocking Coal Co. and the Ohimo Mining Co.

DUTCH-SHELL MANAGER APPROVES MURRAY PLAN

(Continued from Page 103)

and should appeal to every constructive element of the industry. Considerable progress has been made and if proper support is given the movement, it can be pushed to a successful conclusion.

"The present rate of production is alarming and ought to be curbed if the industry is to avoid prolonged uncertainty and great losses. Stocks on hand are already far too large and the increased output now planned can only result in further price decreases. Sound business judgment dictates curtailment of production to a point well below present demand so that stocks can be substantially reduced. This would avoid the waste involved in the storage of such enormous quantities of production and would relieve the industry of heavy carrying charges and help pave the way to a return to more stable conditions.

"Any factor which tends to increase production of petroleum products is sure to be detrimental. For this reason, the Shell companies feel it unwise to attempt to meet 'bootleg' prices of gas by marketing a low quality product. In recent years the Shell companies have improved the grade and the antiknock qualities of their gasoline and have generally advocated giving consumers a better quality rather than the reverse. Smaller quantities of gasoline of this superior quality are obtained from a given quantity of crude, than if inferior gasoline is manufactured. Thus the manufacture of this high grade product has tended to reduce the total quantity of gasoline produced.

"The production and sale of low quality gasoline to compete with that offered by 'bootleggers' will result in increased output and consequently a further bad effect upon the market. One would like to see improved qualities all around, particularly as this becomes ever more necessary by the trend of automobile development toward higher compression engines.

"Further, it should be remembered that the general distribution of a low quality product will entail very heavy additional capital investments in the way of pumps, tanks and other facilities, thus adding to the already enormous unproductive investment in such facilities. The oil industry can ill afford such an expenditure at this time."

Advisory Committee Reports Progress on Interstate Oil Pact

OKLAHOMA CITY, Okla., Apr. 27.—First steps toward drafting an interstate pact for protection of the domestic oil industry were taken today by the legal subcommittee of the Oil States Advisory Committee at its meeting here.

Cicero I. Murray, chairman of the advisory committee, and who called the meeting to draft an agreement to which nine oil producing states are expected to adhere, said "we made real progress."

Mr. Murray said the legal subcommittee would be in session for several days.

Northcutt Ely, executive assistant to the Secretary of the Interior, who is attending the meeting as a Federal observer, said upon arrival in the city that the production of oil must be safeguarded for the interests of the nation. Mr. Ely made it clear he attended the meeting merely as an "observer."

Mr. Murray asserted that the purpose of the advisory committee was to "take the oil industry out of politics."

"The states," he added, "will not surrender any of their rights."

Tom Hunter, of Wichita Falls, Tex., representing independent operators of North Texas; Kenner McConnell, of Columbus, Ohio; and Warwick M. Downing, of Denver, Colo., attended the meeting along with lawyers representing oil interests in drawing up the pact, which will be submitted to the whole advisory committee for approval at its meeting in Austin, Tex., May 4.

AUTO OUTPUT UP

With an output of 276,341 vehicles in March, motor production in the United States in March reached the highest point since June, 1930. Output included 230,835 passenger cars, 45,096 trucks and 410 taxicabs, representing an increase of 56,402 vehicles over February.

HOLOCAUST AT WELL IN GREGG COUNTY, TEXAS

FORT WORTH, Tex., April 28.—A report received this evening from Gladewater, Gregg County, says nine men were believed to have been killed in an explosion and fire at the Sinclair Oil & Gas Co. No. 1, Cole, which occurred late in the day. It was also reported that eight others were unaccounted for and five perhaps fatally burned.

Ambulances were called to the scene from Gladewater, Longview and Tyler, but those killed and injured were so badly burned immediate identification was impossible.

Headquarters of the Sinclair Oil & Gas Co., in Tulsa, were informed that six men were killed and five dangerously injured, but up to that time no details had been received.

OIL POSSIBILITIES IN CUBA NOW INTERESTING AMERICAN GEOLOGISTS

Cuba's petroleum industry, which has struggled along with indifferent success for the past 10 years or more, is at last showing more promising from the production standpoint, and the refining industry is becoming established on a small scale on the island. The best producer yet brought in on the island was completed by Cia Union Petrolera de Cubo (not identified with the Union Oil Co. of California) in January of this year. This well, in the Bacuranao Field, adjacent to Havana, was completed at 728 feet, and was reported good for 4,000 bbls. per day.

The new well was said to be flowing from what is described as a true oil sand, and a heavy gas pressure was reported encountered in topping the sand. Owing to lack of storage and handling facilities, the well has remained shut in since its completion, and the company is materially enlarging the small refinery which it had previously operated in the field. The new well, which is known as No. 39, is the largest producer yet reported in Cuba and Cia Union Petrolera de Cuba has more than 1,000 acres surrounding this well.

American geologists who have prospected Cuba are optimistic regarding the outlook for the development of considerable oil production on the island. Formations, they declare, are favorable for both oil and gas production.

There are three areas in Cuba now producing crude petroleum on a commercial scale, and with American operators introducing modern prospecting and drilling methods on the island, the outlook for a more rapid development of Cuba's petroleum resources is regarded as favorable. In the Motembo Field in Santa Clara Province, there is one well producing approximately 50 bbls. of 70 gravity oil daily.

Atlantic Refining Co. has shown considerable interest in Cuba, and has had a party of geologists prospecting the island over a wide scale in the province of Oriente. Other American interests are likewise in the field, and Cuban capital is turning to petroleum in a larger way, General Petroleum Corp. of Cuba having recently been incorporated with capital of $2,000,000.

According to geologists' reports, Pinar del Rio, Cuba's most westerly province, abounds in oil "signs" with many surface seepages showing everything from gasoline downward. The formation in this province is said to resemble the prolific Maracaibo Bowl in Venezuela and some of the Texas structures.

Optimism regarding the outlook for Pinar del Rio is heightened by the presence of liquid "chapopote," discovery of which by Doheny led to the opening of the rich Mexican fields of the "Golden Lane" days.

The Cuban government, anxious to see a petroleum industry developed on the island, is reported to have a very liberal policy with respect to grants. Areas not already held under concession, at last reports, could be legally acquired and perpetual title granted by the Cuban government, the grant carrying no obligations with respect to rental or royalty on oil, gas or mineral discoveries.

T. T. GRAY, INVENTOR OF GRAY TOWER, DEAD

Thomas T. Gray, president of the Gray Processes Corp., Newark, N. J., died in that city last Monday night, April 27, of pneumonia after an illness of four days. Mr. Gray was widely known in the refining branch of the oil industry and he was the inventor of the Gray tower for vapor phase refining, a process extensively used in plant operations. He was associated with his brother, A. McD. Gray, in the Gray Processes Corp.

Thomas Gray came of a family long identified with oil refining. His father, P. R. Gray, founded the Amber Oil Works, Franklin, Pa., and pioneered in important processes in the refining of lubricating oil and invented the Gray chiller. At the time of his retirement he was superintendent of the Tide Water Oil Co.'s lubricating oil department. A. McD. Gray, a brother of Thomas Gray, is superintendent of the lubricating department of the Continental Oil Co. in Ponca City, Okla. E. B. Gray, another brother, is assistant superintendent of the Barnsdall refinery in Barnsdall, Okla., John L. Gray, a brother, is vice president of the Deep Rock Oil & Refining Co., Tulsa. P. R. Gray, Jr., was in charge of the engineering department of the Gray Processes Co. at the time of his death in 1928.

Late Fields

(Continued from Page 24)

ities in the State were reported for the week ending April 25. McPherson County, which leads the State in activity, had only one first report. Other new operations were reported, one in Rice County and one in Lyon County. The gas field in the southwestern part of State reports two new operations, one in Stevens County and one in Morton County.

The test of Hallow and others' No. 1 Church Lot, in Section 20-23-3w, northeast of the Study-Turner Pool, in Harvey County, was drilling at 1,350 feet.

J. A. MAYERS DIES

NEW YORK, Apr. 27.—J. Alexander Mayers, vice president of the Cumberland & Allegheny Gas Co., subsidiary of the Columbia Gas & Electric Co., died unexpectedly of a heart attack at Cumberland, Md., on April 24, at the age of 61.

AERIAL PICTURE OF A PART OF THE JOINER POOL IN RUSK COUNTY, TEXAS

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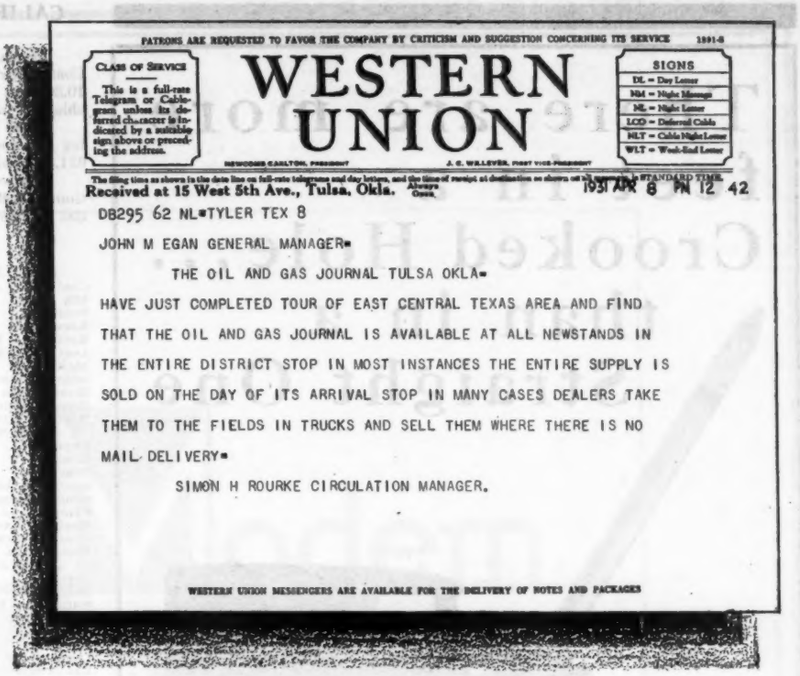

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CALIFORNIA OIL FIELD OPERATIONS FOR MARCH, 1931

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for March amounted to 16,364,842 bbls., an average of 527,898 bbls. per day. This is a decrease of 5,350 bbls. per day under February production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 1,328,316 bbls. The total stocks at the end of the month were 177,611,522 bbls. The total stock decrease for 1931, up to March 31, was 3,421,619 bbls.

Eighteen wells were completed during the month with an initial daily production of 6,404 bbls., compared with 34 wells completed during February with an initial production of 19,146 bbls.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

	Bbls. per month	Daily average Mar., 1931	Daily average Feb., 1931	Daily average Mar., 1930
Group No. 1—				
Coalinga	266,491	8,596	8,762	9,220
Elk Hills	453,465	14,628	14,665	17,677
Fruitvale	63,743	2,056	2,108	2,063
Kern River	331,010	10,678	11,140	16,395
Kettleman Hills	805,020	25,968	26,856	12,861
Lost Hills-Belridge	202,859	6,544	6,514	2,414
McKittrick	112,336	3,624	3,741	4,254
Midway-Sunset	1,632,322	52,656	53,309	68,321
Mount Poso	232,852	7,511	7,511	9,920
Round Mountain	6,825	220	228	3,238
Wheeler Ridge	16,604	536	536	619
Group No. 2—				
Capitan	2,619	84	681	74
Elwood	1,078,562	34,792	31,110	39,001
Rincon	68,623	2,214	2,177	2,897
Santa Barbara	5,515	178	350	.....
Santa Maria	79,728	2,573	2,597	3,091
Summerland	4,714	152	168	406
Ventura Avenue	1,386,281	44,719	44,694	44,370
Ventura-Newhall	111,403	3,594	3,885	5,005
Watsonville	1,938	62	62	62
Group No. 3—				
Coyote	324,003	10,452	10,442	10,833
Dominguez	368,858	11,899	11,814	9,126
Fullerton (Brea, Olinda)	331,474	10,692	10,417	13,548
Huntington Beach	685,876	22,125	21,498	29,121
Inglewood	471,702	15,216	15,302	17,790
Lawndale	8,139	263	303	154
Long Beach	2,788,994	89,967	94,914	99,421
Los Angeles-Salt Lake	44,325	1,430	1,440	1,523
Montebello	221,956	7,160	7,087	7,017
Newport	1,141	37	40	40
Playa Del Rey	972,752	31,380	32,658	.....
Potrero	22,358	721	364	952
Richfield	211,211	6,813	7,004	10,721
Rosecrans	123,986	4,000	4,803	6,809
Santa Fe Springs	2,204,480	71,112	71,353	150,069
Seal Beach	490,778	15,831	14,943	24,006
Torrance	187,434	6,046	6,009	12,114
Whittier	42,455	1,370	1,363	1,410
Total March	16,364,842	527,898	533,248	635,483
Total February	14,930,932	533,248		
Decrease	*1,433,910	5,350		

*Increase.

PACIFIC COAST TERRITORY PETROLEUM STOCKS

Heavy crude, heavier than 20° A.P.I. including all grades fuel	105,708,874	106,524,024	815,150	113,123,700
Refinable crude, 20° A.P.I., and lighter	43,017,172	42,650,026	*367,146	44,810,122
Finished gasoline, engine distillate and natural gasoline	17,073,123	17,685,477	612,354	18,202,025
Naphtha distillates	3,303,101	3,378,904	75,803	3,026,623
All other stocks	8,509,252	8,701,407	192,155	9,807,908
Total all stocks	177,611,522	178,939,838	1,328,316	188,970,378

*Increase.

OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Completed	Daily initial output	Active producing	Abd. Wells Drillers	Abd. Wells Producers
Group No. 1—							
Buttonwillow gas field	0	1	0	0	3	0	0
Coalinga	0	0	0	0	659	0	0
Elk Hills	0	0	0	0	209	0	2
Fruitvale	0	0	0	0	17	0	0
Kern River	0	1	1	170	900	0	0
Kettleman Hills	2	21	0	0	8	0	0
Lost Hills-Belridge	0	10	0	0	157	1	0
McKittrick	0	0	0	0	243	0	7
Midway-Sunset	0	3	1	150	1,798	0	5
Mount Poso	2	2	0	0	60	0	0
Round Mountain	0	1	0	0	1	0	0
Wheeler Ridge	0	0	0	0	34	0	0
Group No. 2—							
Capitan	0	1	0	0	3	1	0
Elwood	1	0	0	0	42	0	0
Rincon	0	3	0	0	32	0	0
Santa Barbara	1	0	0	0	3	0	0
Santa Maria	0	2	0	0	176	0	2
Summerland	0	0	0	0	97	0	0
Ventura Avenue	2	16	1	230	128	0	0
Ventura-Newhall	2	10	0	0	411	7	0
Watsonville	0	0	0	0	6	0	0
Group No. 3—							
Coyote	0	5	0	0	174	0	0
Dominguez	0	1	0	0	61	0	0
Fullerton	0	2	0	0	349	0	1
Huntington Beach	0	2	2	490	382	0	1
Inglewood	0	0	1	125	205	0	0
Lawndale	0	0	0	0	7	0	0
Long Beach	2	28	4	813	863	8	2
Los Angeles-Salt Lake	0	0	0	0	260	0	0
Montebello	0	0	0	0	171	0	0
Newport	0	1	0	0	4	0	0
Playa Del Rey	2	19	8	4,426	166	0	1
Potrero	0	1	0	0	14	1	4
Richfield	0	0	0	0	163	0	1
Rosecrans	0	1	0	0	94	0	2
Santa Fe Springs	1	1	0	0	456	0	1
Seal Beach	0	1	0	0	134	0	1
Torrance	0	0	0	0	439	0	6
Whittier	0	0	0	0	170	0	0
Miscellaneous drilling	9	143	0	0	0	15	0
Total March	24	276	18	6,404	9,125	33	36
Total February	44	294	34	19,146	9,395	28	8
Decrease	20	18	16	12,742	170	*5	*28
Average for year 1930	80	434	63	48,710	9,632	21	27
Average for year 1929	109	610	76	100,625	10,550	26	18
Average for year 1928	107	520	59	56,802	10,823	15	35
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,388	24	17

*Increase.

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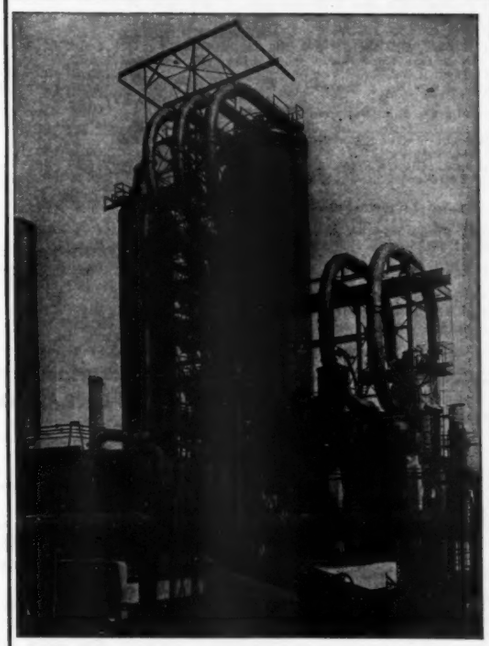

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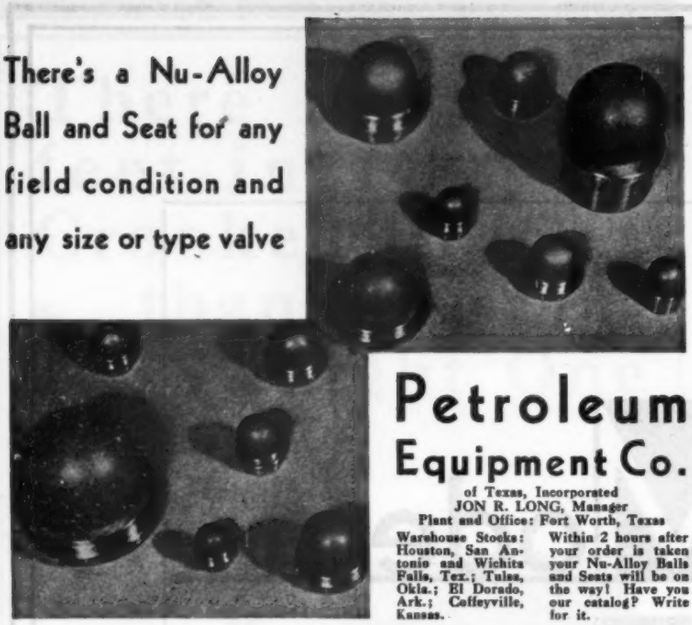

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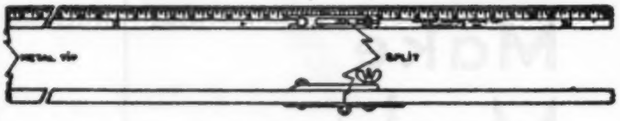

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WILDCAT OPERATIONS IN KANSAS

(Continued from Page 28)

MARION COUNTY

Midwell's No. 1 La Master, NW cor. Sec. 31-22-4 ..... Shut down 650 ft.

McPHERSON COUNTY

Henderson & Holden's No. 1 Sommerfield, NE NW Sec. 23-19-1w ..... Drlg. 2,954 ft.; showing 25 bbls. of oil and 50 bbls. of water a day; T. D. 3,313 ft.; drlg. 3,425 ft.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-43w ..... Fishing 5-in. csg. 3,460 ft.

MORRIS COUNTY

Urschel et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7 .. Machine.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9 .... Drlg. 1,910 ft.

NESS COUNTY

Gypsy Oil Co.'s No. 1 Coleman, C SW NE Sec. 25-17-25w. Drlg. 4,460 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w ..... Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 .... Shut down 1,525 ft.
Fields' No. 1 Usker, SE cor. Sec. 35-16-17 ..... Shut down 400 ft.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Unknown, SW cor. Sec. 3-2-35w ..... Shut down 2,700 ft.

RICE COUNTY

Detrick & Langston's No. 1 Purcell, NW cor. Sec. 33-19-9w ..... Drlg. 690 ft.
McFadden and Shell's No. 1 Jennings, SW NE NW Sec. 29-18-6w ..... T. D. 1,450 ft.; plugging back to 1,130 ft.
Cress et al's No. 1 Sharp, SE NE Sec. 13-20-10w ..... Show oil 3,107-15 ft.; Silicious 3,-330-36 ft.; estimated 1,500 bbls.; shut in.
Allison-Fitzwilliams' No. 1 Blake, NE NW Sec. 9-18-10w. Rig.

RENO COUNTY

Shell Continental's No. 1 Blake, SW SE SE Sec. 23-23-4w. Rigging up standard tools 3,269 ft.

ROOKS COUNTY

Empire Oil & Ref. Co.'s No. 1 Halsman, SW NE SE Sec. 17-7-20w ..... Drlg. 2,545 ft.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW Sec. 17-19-16w ..... Drlg. 2,160 ft.; show gas.

RUSSELL COUNTY

Hall et al's No. 1 Mills, SE SW SE Sec. 30-14-13w ..... Drlg. 1,750 ft.
Agate Oil & Gas Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w ..... Shut down 3,374 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w .... Shut down 2,814 ft.

SEDGWICK COUNTY

Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1. Shut down 2 '40 ft.

SALINE COUNTY

Stanolind Oil & Gas Co.'s No. 1 Martin Com., NE SE SE Sec. 3-16-3w ..... Drlg. 1,755 ft.
Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w ..... Shut down 2,700 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW SW Sec. 27-7-26w . Drlg. 1,319 ft.

STAFFORD COUNTY

Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE Sec. 11-24-13w ..... Rig.

STEVENS COUNTY

Sidwell et al's No. 1 Kelly, SW NE Sec. 16-34-38w .... Completed 2,678-2,862 ft.; 3,000,-000 ft. gas.

SUMNER COUNTY

Spencer et al's No. 1 Porter, NE SW Sec. 12-33-4w ..... Rig on ground.
Otstot et al's No. 2 Marlow, C SE NW SE Sec. 22-33-3w. Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 .... Shut down 1,720 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 26)

HASKELL COUNTY

Ault et al's No. 1 Harrison, CWL SE NE Sec. 14-9-19 .... Shut down 650 ft.
Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 .. .... Shut down 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-9-19 .... Drlg. 140 ft.
Finefield's No. 1 Ogle, NW cor. Sec. 6-7-20 ..... Fishing 600 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-15e ..... Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-15e .. Shut down 2,387 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 ..... Shut down 1,645 ft.

KAY COUNTY

Wilwright Gas Co.'s No. 1 Wildegrube, NE SW Sec. 14-27-1 ..... Shut down 4,055 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 ..... Location.
Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-3 ..... Shut down 3,295 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 ..... Shut down 3,575 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w .. .. Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w.. Drlg. 4,485 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 3-7-18w .... Rig.

LATIMER COUNTY

Choctaw Gas' No. 1 Weaver, C NE NW Sec. 4-6-18 ..... Shut down 3,475 ft.
P. English's No. 1 Unknown, NW SE Sec. 16-6-19 .. .... Drlg. 1,580 ft.
Leflore Oil Co.'s No. 1 McBee, NW cor. Sec. 3-7-21 .... Shut down 3,601 ft.

LINCOLN COUNTY

Mote-Wheeler's No. 1 Stafford, NW NE Sec. 32-17-4 .... Fishing 4,295 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Fishing 5,687 ft.

MUSKOGEE COUNTY

H. E. Dowd's No. 1 Hembree, C NW NE Sec. 23-10-19 ... Rig.
I. T. L. O.'s No. 1 Unknown, C SW NE Sec. 23-11-21 .. Drlg. 1,050 ft.
Rebold's No. 1 Miller, SE NE NE Sec. 32-13-19 ..... Rig.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 .... Shut down 1,011 ft.

OKFUSKEE COUNTY

E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 ..... Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 .. Shut down 3,690 ft.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-13-3w ..... Shut down 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ..... Shut down 5,515 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE NW SE Sec. 17-12-4w ..... Shut down 6,700 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-6 ..... Shut down 1,950 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 ..... Shut down 1,740 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 .... Rig.

PITTSBURG COUNTY

Red Bank's No. 1 Campbell, C NW Sec. 6-6-14 ..... Rig.
Vincent et al's No. 1 U. S. Coal Land, NW SE Sec. 9-5-14 ..... Abandoned 100 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ..... Rig.

POTTAWATOMIE COUNTY

Droppleman et al's No. 1 Jones, SE NW Sec. 21-8-3 .... Drlg. 4,020 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w ..... 20,000,000 ft. gas 5,350-5,400 ft.; total depth 5,539 ft.; shut down; sprayed 50 bbls. gasoline.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w .....Drlg. 4,100 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Fishing 2,956 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunray, NW SE Sec. 35-5-5 .....Location.

STEPHENS COUNTY

Ross Southerd's No. 1 McKinney, NE cor. Sec. 25-1-8w ..Shut down 1,062 ft.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w..Drlg. 1,800 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .....Drlg. 460 ft.
Petroleum Holdings, Inc.'s No. 1 Music, NW cor. Sec. 10-9-20w .....Shut down 280 ft.

WOODWARD COUNTY

Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-22-17w .....Shut down 7,445 ft.

OKLAHOMA PANHANDLE
TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18..Drlg. 4,625 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e .....Spudded; shut down.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Stewart-Howland's No. 1 Howard, NW SE NW Sec. 6-4s-11 .....Shut down 100 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 .....Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..T. D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Shut down 690 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e ..Shut down 485 ft.

COTTON COUNTY

Gilbert-Lowery's No. 1 Harneg, C SE SE Sec. 4-2s-11w ..Shut down 2,245 ft.

JEFFERSON COUNTY

Chenault et al's No. 1 Grogan, NE SW NW Sec. 23-7s-6w .....Drlg. 1,447 ft.
Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w .. ...Location.
C. V. Chenault et al's No. 1 Grogan, SW NE SE Sec. 15-7s-6w .....Location.
Smith's No. 1 M. O. Carty, SE NW NE Sec. 18-4s-8w ....Drlg. 2,567 ft.

LOVE COUNTY

Autry et al's No. 1 Cross, SW NW NW Sec. 26-6-2 .....Drlg. 500 ft.
Batson & Sterrette's No. 1 Dillard, SE NE NW Sec. 25-6s-3 .....Show 5 bbls. 1,585-96 ft.; T. D. 4,433 ft.; P. B. to 1,604 ft.

MARSHALL COUNTY

McCrory et al's No. 1 Little, NW SW Sec. 30-7s-6 .....Drlg. 338-90 ft.; showing oil; T. D. 490 ft.
D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6 .....Drlg. 2,050 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-15-7w .....Shut down 1,582 ft.

SAN ANTONIO OIL MEN PERFECT ORGANIZATION

SAN ANTONIO, Tex., Apr. 25.—Harry Pennington, petroleum engineer and oil producer, was elected president of the San Antonio Independent Oil Men's Association at the organization meeting held in the ballroom of the San Antonio Casino Club. The organization is to be affiliated with the Independent Petroleum Association of Texas.

The vice presidents are: Claude Witherspoon, C. E. Stalker and R. F. Schoolfield. B. D. Stevenson was named secretary and F. M. Frasher was elected treasurer. The directors named were: J. E. Walsh, George C. Cannon, E. M. Jones, Al Buchanan, Alexander Boynton and Judge Nelson Lytle.

FEATURES OF INTEREST IN LINER INSERT PUMP

The Axelson traveling type liner insert pump, introduced by the Axelson Manufacturing Co., Ltd., Los Angeles, Calif., offers two outstanding features. Liners are incorporated, cups have been eliminated. From the liner pump have been taken the liner and steel plunger features. The insert features of the traveling tube type pump, together with its decreased power cost, are embodied also.

Through means of special cage construction the Barnwell plunger principle has been built into the traveling type liner insert pump. This device, according to the manufacturer, not only minimizes oil emulsion and "gas locks" but is a distinct advantage where sand must be handled. The beveled upper lip of the Barnwell type cage forms a wiping edge that removes all sand from the liners, preventing abrasion between the plunger and liners. The Barnwell cage is ground on the outside and, in reality, serves as a close-fitting extension to the working surface of the plunger. A.P.I. specifications are adhered to.

Operation of the pump is identical with that of the traveling tube type insert pump. The plunger is stationary, being connected to the "hold-down" with the standing valve tube. The seat and ball are at the top of the plunger. The jacket, in which are inserted the liners, works with the sucker rods. The working valve is larger than the standing valve, thus allowing the fluid to pass rapidly from the barrel into the tubing. The pressure is equalized on top of the plunger as well as below.

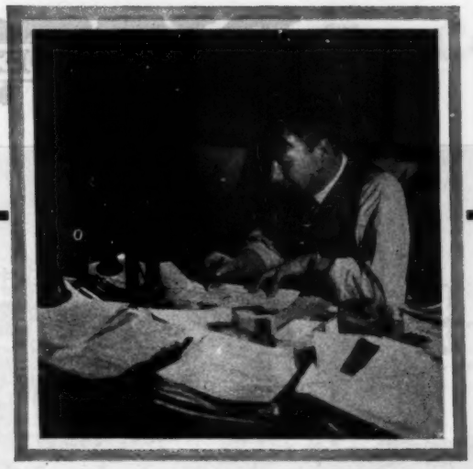
The complete pump is installed with the rods, eliminating the necessity of a tubing job. Liner insert pumps are furnished with the improved Ritter "hold-down" or a cup "hold-down." Unless otherwise specified, these pumps come equipped with the Ritter "hold-down" which incorporates an expanding steel lock ring engaging with a recess in the Ritter shoe. The use of the Ritter avoids sticking, floating or traveling of the standing valve. The abrupt angle of the seat permits the body to be easily removed and the lock ring holds it definitely in place until it is desired to disengage it from the shoe. The cup "hold-down" is of conventional type, seating in the upper end, or top liner of the old pump jacket, utilizing four cups and a guiding plunger.

WELDING JOBS SPEEDED UP BY NEW GE CONTROL

Intermittent line and spot welding with interruptions as high as 1,000 per minute and even higher are possible with a new type of control equipment announced by the General Electric Co. This new control uses "thyratron" tubes instead of contactors for interrupting the flow of current. In addition to the advantage of the high speeds which can be obtained, contactor wear is eliminated, both on the contactor tips and the entire mechanical assembly. As a result, the time hitherto spent in replacing worn contactor tips is saved.

The theory of the new control is as follows: In series with the primary of the welding transformer proper is placed the primary of a series transformer whose secondary is wound for a high voltage. Connected to the high-voltage winding are a pair of thyratrons which, when conducting, virtually short-circuit the high-voltage winding. When the high-voltage winding is short circuited, the impendance of the primary or low-voltage winding of the series transformer is very low, thus permitting approximately full load current to pass to the primary of the welding transformer proper. Conversely, when the thyratrons are not conducting the high-voltage winding of the series transformer is open circuited and the impendance of the low-voltage winding is at a maximum, thus permitting practically no current to flow in the welding transformer primary circuit.

Conduction or nonconduction of the



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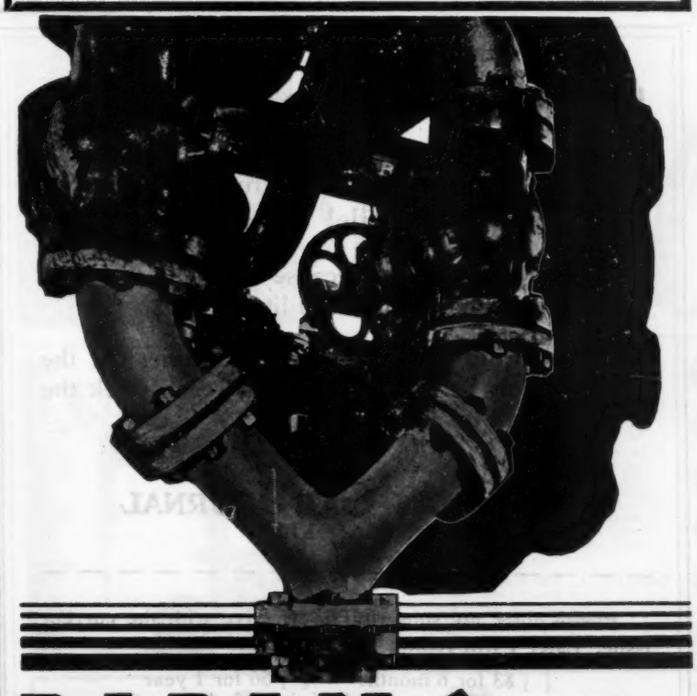

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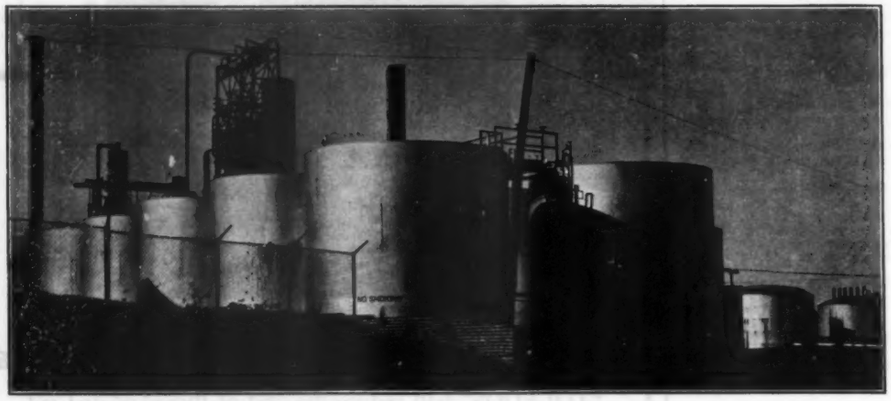

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LEGALS

Notice of sale of oil and gas lease, Department of the Interior, United States Land Office, Washington, D. C., April 6, 1931. Notice is given that oil and gas lease under Sec. 17 of the leasing act of February 25, 1920 (41 Stat. 437) on the following described land in Oklahoma County, Oklahoma, is offered for sale at the royalty rates and in accordance with the drilling requirements fixed in the standard lease form, copy of which may be procured from the Commissioner of the General Land Office: T. 12 N., R. 3 W., Sec. 35, Lot 8, containing 0.56 acre as shown upon the township plat approved September 22, 1873; including all Government rights to the accretions appurtenant thereto, and riparian rights within the abandoned bed of the North Fork of the Canadian River extending to the medial line thereof, but not beyond the position of the original left bank of said river, amounting to 0.66 acre; and subject to the right of way of the county highway known as East Reno Avenue; the whole being more particularly described as follows: Beginning at the point for the meander corner on the original right bank of the river on the south boundary of Sec. 35, T. 12 N., R. 3 W., on the center line of East Reno Avenue, from which point of beginning the point for the cor. of Secs. 1, 2, 35, and 36, located at the intersection of the center lines of East Reno Avenue and Eastern Avenue bears S.89°57'30"E., 1.39 chs., distant; thence from said point of beginning, by metes and bounds (1) N.46°00' E., 1.13 chs., to the medial line of the abandoned channel; (2) thence along the medial line N.44°00'W., 1.05 chs., to the position of the original left bank; (3) thence along the alinement of the original left bank N.71°30' W., 1.54 chs.; (4) thence S.76°30'W., 2.72 chs.; (5) thence S. 67°15'W., 2.35 chs., to the medial line of the abandoned channel; (6) thence along the medial line S.6°00'E., 0.37 chs. to the south boundary of Sec. 35 and center line of East Reno Avenue; (7) thence along the line between Secs. 2 and 35, and on the center line of East Reno Avenue, S.89°57'30"E., 0.90 chs., to the point for the meander corner on the original right bank, and 4.91 chs., to the place of beginning. Said tract will be leased to the responsible qualified bidder offering the highest cash bonus for a lease at the prescribed royalty. The successful bidder, when so notified, will be required to deposit cash, or certified check on a solvent bank, for one-fourth of his bid and pay the remaining three-fourths upon issuance of lease. Any lease issued will be subject to the act approved March 4, 1931 (Pub. No. 853), amending Secs. 17 and 27 of the General Leasing Act of February 25, 1920 (41 Stat. 437). Sealed bids will be received in the office of the Secretary of the Interior up to 10:00 A.M., May 11, 1931. Bidders are warned against violation of the provisions of Sec. 59, U. S. Criminal Code, approved March 4, 1909, prohibiting any unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. C. C. Moore, Commissioner.

Sale of oil and gas leases. Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that the following described land in Eddy County, New Mexico, is offered for lease under Section 17 of the act of February 25, 1920 (41 Stat. 437), at the customary royalty schedule in the standard lease form, and subject to the following conditions: 1. Unit No. 1: T. 18 S., R. 27 E., N.M.P.M.—Sec. 8, NE¼, NE¼ NW¼—200 acres. 2. The lessee shall agree to unite with others in adopting and operating under a cooperative or unit plan of development or operation of said field whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest, and 3. The lessor consents that, if the oil and gas resources of said land can be recovered adequately by means of wells drilled, or to be drilled on adjacent lands, in lieu of drilling and producing wells on the leasehold, the lessee may pay a sum estimated to reimburse the United States for current loss of royalty, such sum, unless determined under a cooperative or unit plan of operation approved by the Secretary of the Interior, to be fixed monthly by the supervisor of oil and gas operations, subject to approval by the Secretary of the Interior whose decision shall be final. Said lease will be offered for sale at public auction in the United States Land Office, Las Cruces, New Mexico, at 10 O'clock A.M. on May 23, 1931, to the highest qualified bidder on the terms specified. The successful bidder must deposit on the date of sale with the officer in charge of the sale, a certified check on a solvent bank, or cash, for one-fifth of the amount bid by him and file the showing of qualifications to receive a lease required by Section 15 of the said regulations. Bidders are warned against violations of the provisions of Section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. (Signed) V. B. May, Register.

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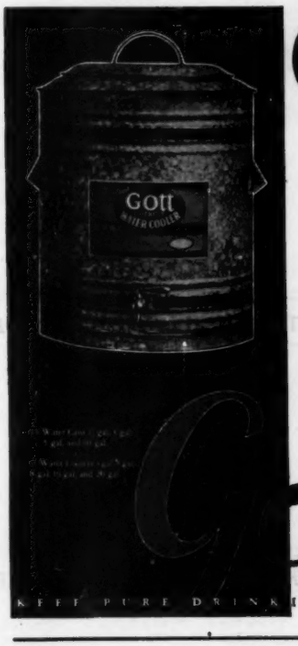

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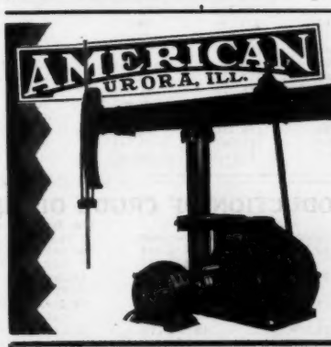

PICTURED is an "American" No. 4-A Oil Well Pumping Unit, one of the most popular of the complete line of oil well pumping units that are made by The American Well Works. All gears are enclosed and run in a bath of oil. This unit is used throughout the oil fields of the world. Catalogs and engineering data upon request.

THE AMERICAN WELL WORKS
General Office AURORA, ILLINOIS and Tulsa
C. S. CARTER, Sales Representative
711 Thompson Bldg., Tulsa, Oklahoma
Wm. PIERCE, Sales Representative
705 Main St., Dallas, Texas

ROOTS-CONNERSVILLE-WILBRAHAM
DIVISION OF THE STACEY ENGINEERING COMPANY
Michigan Avenue and 14th Street
Connersville, Indiana

20 North Wacker Drive, Chicago, Illinois
235 Montgomery Street, San Francisco, California
420 Lexington Avenue, New York City

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Report for Month of February

Runs	Month (bbls.)	Dly. av. (bbls.)
Prairie P. L. Co.*	887,880	31,710
Gulf P. L. Co.	1,196,957	42,749
Texas P. L. Co.	593,142	21,184
Magnolia P. L. Co.	1,511,227	53,972
Empire P. L. Co.	1,675,585	59,842
Cosden P. L. Co.	674,187	24,078
Stanolind P. L. Co.*	2,693,413	96,193
Oklahoma P. L. Co.	2,389,924	85,354
Other lines*	5,516,000	197,000
Total February	17,136,296	612,082
Total March	18,271,263	589,394
Difference	1,133,967	22,688

Shipments		
Prairie P. L. Co.†	2,147,670	76,702
Gulf P. L. Co.	1,007,357	35,976
Texas P. L. Co.	981,791	35,064
Magnolia P. L. Co.	1,308,758	46,741
Empire P. L. Co.	1,824,912	65,176
Cosden P. L. Co.	777,082	27,753
Stanolind P. L. Co.†	2,936,612	104,879
Oklahoma P. L. Co.	2,440,712	87,168
Other lines*	5,572,000	199,000
Total February	19,021,890	679,460
Total March	19,602,309	632,331
Difference	580,419	46,129

Stocks	
Prairie O. & G. Co.*	37,556,000
Gulf P. L.-Gypsy Oil Co.	9,034,933
The Texas Company	3,950,044
Magnolia Petroleum Co.	6,095,271
Empire P. L. Co.	5,321,285
Mid-Continent Pet. Corp.	3,742,097
Stanolind C. O. Pur. Co.*	18,270,000
Oklahoma P. L. Co.	2,531,264
Carter Oil Co.	9,236,319
Other lines*	22,697,000
Total February	118,434,227
Total March	119,400,561
Difference	966,334

*Estimated. †Prairie and Stanolind shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MARCH

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for February and March:

	Feb. '31	Mar. '31
Nat. Transit	121,907.94	137,918.13
S. W. Pa. P. L.	66,984.81	73,145.44
Eureka P. L.	271,589.18	294,873.88
Buckeye P. L. (Macksb'g)	283,050.42	311,712.85
Buckeye P. L. (Cleveland)	10,192.36	11,769.49
Buckeye P. L. (Lima, etc.)	76,304.68	79,000.44
Indiana P. L.	3,593.88	3,199.09
Cumberland P. L.	158,426.03	168,106.26
N. Y. Transit	25,972.80	28,392.78
Tide Water P. L.	23,230.37	24,005.40
Pure Oil	188,721.57	212,358.30
Stoll Oil Ref.	25,934.10	32,191.99
Bradford Tran.	286,659.50	307,597.03
Total	1,544,567.64	1,684,271.08
Daily average	55,163.13	54,331.32

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for February and March:

	Feb. '31	Mar. '31
Nat. Transit	434,836.96	565,089.04
S. W. Pa. P. L.	349,431.73	423,661.64
Eureka P. L.	329,203.94	328,329.66
Buckeye P. L. (Macksburg)	255,836.89	265,351.57
Buckeye P. L. (Cleveland)	1,708.34	2,440.89
Buckeye P. L. (Lima, etc.)	1,346,381.03	1,601,658.90
Indiana P. L.	704,037.29	737,337.17
Cumberland P. L.	95,198.73	110,949.07
Southern P. L.	36,948.86	79,090.42
N. Y. Transit	158,600.37	187,287.69
Northern P. L.	159,788.80	177,499.13
Tide Water P. L.	454,444.14	362,962.53
Pure Oil	138,500.91	246,505.63
Bradford Tran.	337,789.39	341,249.76
Tuscarora	335,131.21	443,677.56
East Gulf Oil		1,674.23
Total	5,137,844.59	5,874,764.79
Daily average	183,494.45	189,508.54

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of February and March:

	Feb. '31	Mar. '31
Nat. Transit	823,437.33	745,113.23
S. W. Pa. P. L.	432,681.19	369,482.29
Eureka P. L.	1,599,276.50	1,819,344.51
Buckeye P. L. (Macksburg)	592,937.82	565,767.95
Buckeye P. L. (Cleveland)	38,449.28	49,352.24
Buckeye P. L. (Lima, etc.)	4,308,481.54	3,619,980.13
Indiana P. L.	546,697.37	611,627.34
Cumberland P. L.	645,138.76	652,425.69
Southern P. L.	323,636.70	270,576.36
N. Y. Transit	120,111.18	148,013.40
Northern P. L.	325,464.55	343,330.93
Tide Water P. L.	944,684.28	1,030,157.40
Pure Oil	649,860.39	625,831.52
Tuscarora	13,749.28	13,247.56
Brad. Trans.	141,883.72	143,165.00
East Gulf Oil		4,647.01
Total	11,506,489.99	11,012,162.56
Decrease	324,602.91	494,327.43

Grades of Oil

The following table shows the amount of the different grades of oil held by eastern pipe lines at the close of February and March, showing gross stocks of the above fields:

	Feb. '31	Mar. '31
Pennsylvania	3,844,013.10	3,847,629.68
Lima	804,771.54	791,559.81
Kentucky	655,160.44	647,373.91
Mid-Continent	5,564,627.27	5,090,403.32
Michigan	637,917.64	615,196.34
Total	11,506,489.99	11,012,162.56

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
January	52,904	51,749	75,907	53,939
February	57,002	51,833	79,256	55,163
March	57,485	54,252	76,688	54,331
April	56,812	58,444	84,536	.....
May	62,067	59,902	80,548	.....
June	58,230	58,833	75,430	.....
July	57,144	66,087	68,321	.....
August	57,745	66,087	54,291	.....
September	53,487	67,315	56,595	.....
October	58,100	76,093	58,179	.....
November	53,865	74,831	52,332	.....
December	52,025	74,561	53,999	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
January	146,465	165,721	217,623	175,369
February	167,368	159,387	224,355	183,494
March	158,883	161,474	228,846	189,508
April	172,935	169,737	241,845	.....
May	180,559	184,281	248,383	.....
June	188,024	185,404	234,401	.....
July	189,470	194,763	207,094	.....
August	192,853	194,946	205,506	.....
September	194,138	201,314	193,999	.....
October	176,000	191,867	157,675	.....
November	176,898	202,743	146,638	.....
December	173,572	186,257	143,001	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
January	7,596,564	13,220,045	11,831,092
February	8,738,835	12,991,561	11,506,489
March	9,002,058	13,247,217	11,012,162
April	8,972,172	13,233,961	.....
May	8,903,560	13,052,953	.....
June	8,921,275	13,396,855	.....
July	9,211,595	13,268,562	.....
August	9,440,643	13,047,051	.....
September	9,443,067	12,813,018	.....
October	9,441,101	12,437,555	.....
November	9,868,538	11,851,380	.....
December	11,253,953	11,751,952	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, April 1	3,834,608.40
Runs from wells	400,632.83
Other receipts	208,484.64
Regular deliveries	332,657.86
Other deliveries	188,220.28

The amount of Illinois oil run by the Tide Water Pipe Co. in March was 24,005.40 bbls. Deliveries were 24,005.40 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1931—	Runs	Deliveries
March	424,638.23	356,663.26
1930—		
January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	630,074.32	509,304.60
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.54	388,454.47
August	594,642.12	375,742.43
September	457,001.11	371,691.63
October	478,442.12	320,688.73
November	422,794.68	355,403.12
December	556,418.78	363,719.55
1931—		
January	468,429.04	669,573.19
February	429,284.54	461,262.85

Tide Water Pipe Co., Ltd., also delivered in March 175,613.44 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
April	7,767	.....	14,369	11,800	7,433	41,167	.....	.....	.....	.....	7,500	48,767
May	5,194	3,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838
June	8,300	.....	32,933	20,767	2,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	43,419	23,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,418	5,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710
September	6,300	6,400	25,600	13,400	9,567	61,267	.....	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,268	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516
November	8,367	6,233	33,800	17,733	4,600	70,733	.....	.....	.....	.....	4,800	75,533
December	6,516	4,323	30,645	9,678	3,580	53,742	.....	.....	.....	.....	4,645	58,387
January	8,387	6,613	21,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,871
February	5,787	3,713	29,143	4,000	5,750	47,393	.....	.....	.....	.....	3,750	51,143
March	10,032	1,611	21,388	7,324	8,774	49,129	.....	.....	.....	.....	6,355	55,484

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
April	31,400	8,933	123,500	40,433	19,434	223,700	.....	7,400	3,433	4,167	14,000	237,700
May	24,129	9,322	174,194	39,291	28,226	276,161	8,194	11,548	3,935	1,323	24,900	301,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	2,167	1,333	25,300	283,633
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	3,548	3,000	29,290	276,871
September	33,867	8,533	150,933	34,500	25,567	253,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,839	11,742	146,194	35,355	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548
November	39,633	35,900	124,633	36,467	24,667	261,300	2,467	7,366	.....	1,767	11,600	272,900
December	21,419	14,033	122,774	32,839	33,774	224,839	6,290	10,613	2,097	290	19,290	244,129
January	17,613	13,519	154,225	32,902	30,612	248,871	2,032	11,677	2,097	3,097	18,903	267,774
February	31,321	16,929	127,786	31,714	26,857	234,607	4,536	11,571	.....	536	16,643	251,250
March	27,645	18,935	141,160	26,290	21,129	238,161	4,065	2,580	.....	1,968	8,613	246,774

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
March:	Month	19,499,979	19,115,406	35,503,083	3,504,395	1,817,871	1,942,938	3,327,028	4,223,000	78,143,699
	Daily average	635,483	616,626	822,678	113,045	58,641	62,676	75,388	126,161	2,520,764
April:	Month	18,768,743	19,541,310	34,799,763	3,734,253	1,724,460	1,908,552	3,234,810	4,257,000	77,969,891
	Daily average	625,625	651,377	826,659	124,475	57,482	63,652	77,827	141,900	2,598,996
May:	Month	19,044,444	20,587,503	36,219,488	3,978,235	1,859,896	1,907,482	3,565,219	4,414,000	80,376,776
	Daily average	614,337	664,112	845,786	128,335	53,545	61,543	82,749	142,387	2,593,799
June:	Month	18,020,795	19,754,700	35,643,705	3,765,060	1,704,060	1,928,621	3,519,190	4,288,000	77,621,131
	Daily average	600,693	658,490	854,790	125,502	56,802	64,187	83,973	142,933	2,587,371
July:	Month	18,802,024	18,032,514	25,973,521	3,541,409	1,713,680	2,079,769	3,275,894	3,830,000	77,248,811
	Daily average	606,517	581,694	857,856	114,239	55,280	67,089	105,674	123,548	2,491,897
August:	Month	18,770,466	17,162,034	25,069,593	3,491,530	1,700,102	2,151,120	3,193,341	3,417,000	74,955,191
	Daily average	605,499	553,614	808,696	112,630	54,842	69,391	103,011	110,226	2,417,909
September:	Month	17,984,306	16,509,120	23,111,822	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,237,108
	Daily average	599,477	550,304	770,394	113,517	52,776	66,935	107,967	113,200	2,374,570
October:	Month	18,344,053	16,632,523	23,626,553	3,571,913	1,636,552	2,142,885	3,325,550	3,627,000	72,707,029
	Daily average	585,518	536,533	762,147	115,223	52,792	69,125	104,050	117,000	2,345,388
November:	Month	18,109,459	14,941,770	22,035,222	3,459,320	1,557,870	2,136,948	2,957,100	3,222,000	68,419,689
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,656
December:	Month	17,736,728	15,057,103	21,810,359	3,432,661	1,590,951	2,157,534	3,118,663	3,328,000	68,231,999
	Daily average	572,765	485,713	703,560	110,731	51,321	69,598	100,602	107,355	2,202,646
1931—										
January:	Month	16,485,798	14,850,953	20,890,452	3,149,073	1,574,955	2,131,937	2,966,142	3,374,000	65,223,310
	Daily average	531,797	479,063	667,435	101,583	50,805	68,772	95,682	108,839	2,103,978
February:	Month	14,930,932	13,371,876	18,964,596	2,860,016	1,402,492	1,981,476	2,747,024	3,129,000	59,396,413
	Daily average	533,248	477,567	677,307	102,222	50,089	70,767	98,108	111,750	2,120,158
	Total 12 months	216,647,727	205,556,812	283,448,161	42,402,535	19,666,168	24,475,682	34,478,971	44,505,000	871,181,056

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Total all ports
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Total all ports
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